2044

Italian Truck-Mounted Artillery

Ralph Riccio
and Nicola Pignato

In Action®

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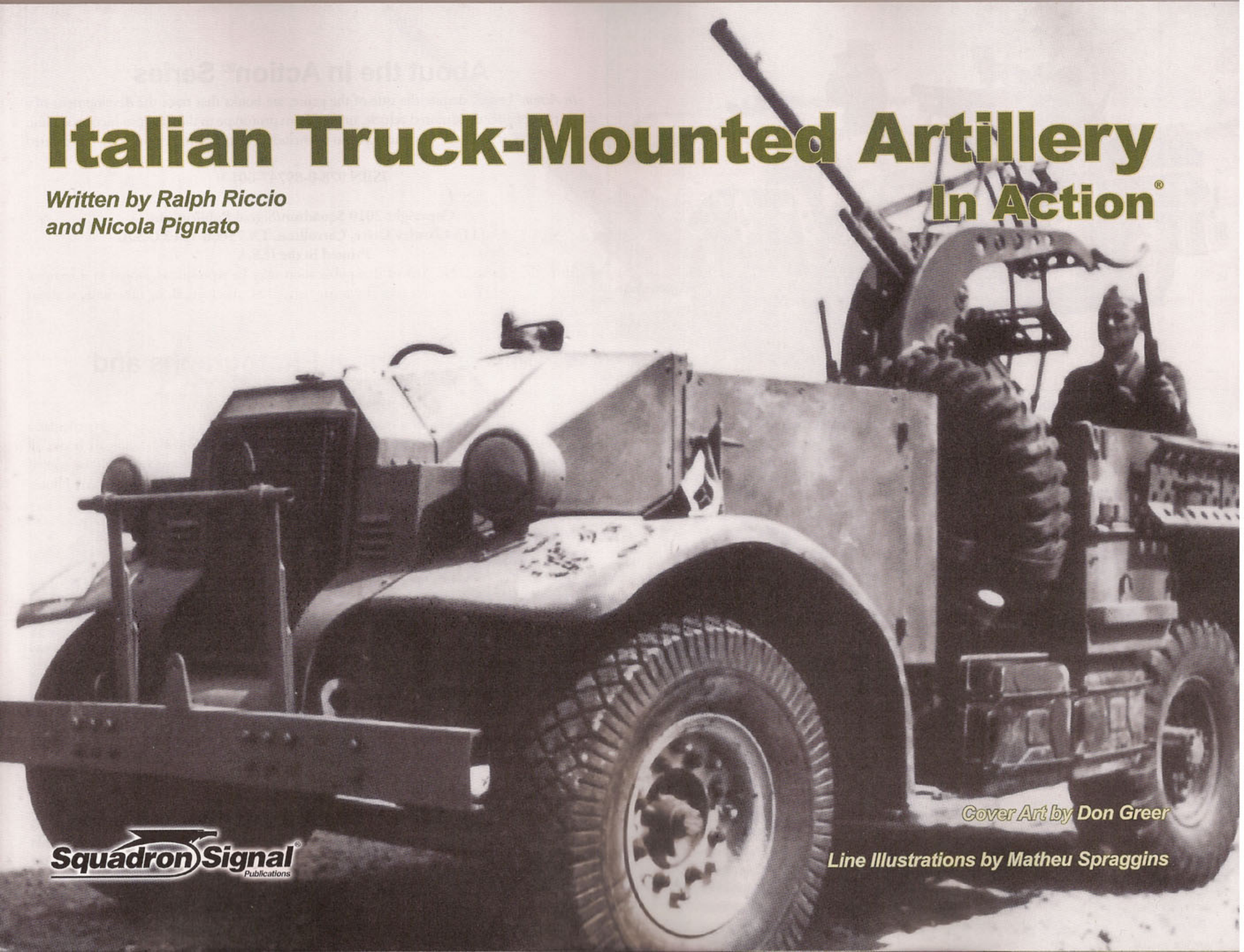
Written by Ralph Riccio and Nicola Pignato



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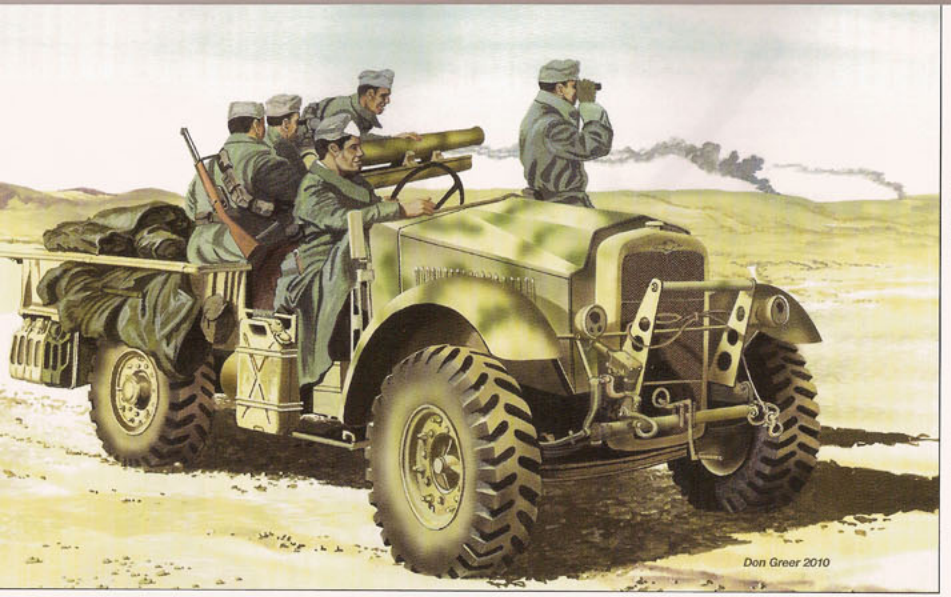

(Front Cover) An Italian artillery crew mans a 65mm gun mounted on a captured British Morris CS8 truck in North Africa. These locally-modified gun trucks were used to provide mobile artillery and anti-tank support in lieu of purpose-built systems.

(Back Cover) The dual-purpose 90/53 gun mounted on the Lancia 3 Ro truck posed a formidable threat to Allied armor. The system's rather prominent silhouette made it a highly visible and attractive target, somewhat compromising its effectiveness.

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(Title Page) A 20mm Breda Model 39 dual-purpose cannon is mounted on a captured Ford F15. The truck-mounted Breda cannon was a highly effective weapon that was respected by Allied fighter pilots in North Africa for its lethal capabilities against low-flying aircraft.

Acknowledgments

Dott. Daniele Ravenna, Archivio Tumiati/Ravenna, Ferrara, Italy; Signor Silvio Monte, Arenzano (Genoa), Italy; LTC Filippo Cappellano, Armored Cavalry (Italian Army); Australian War Memorial, Canberra, Australia (Ron Schroer. Mary Pollard, Anne Bennie); Imperial War Museum, London, England (Louise McFarlane); The Tank Museum, Bovington, England (David Fletcher); REME Museum, Arborfield, Berkshire, England (Brian Baxter); *Convoy* Magazine.

To both of our wives, Charlene Riccio, for her encouragement, support, and assistance with the layout, and Maria Nisi Pignato, who, as always, is a constant work companion.

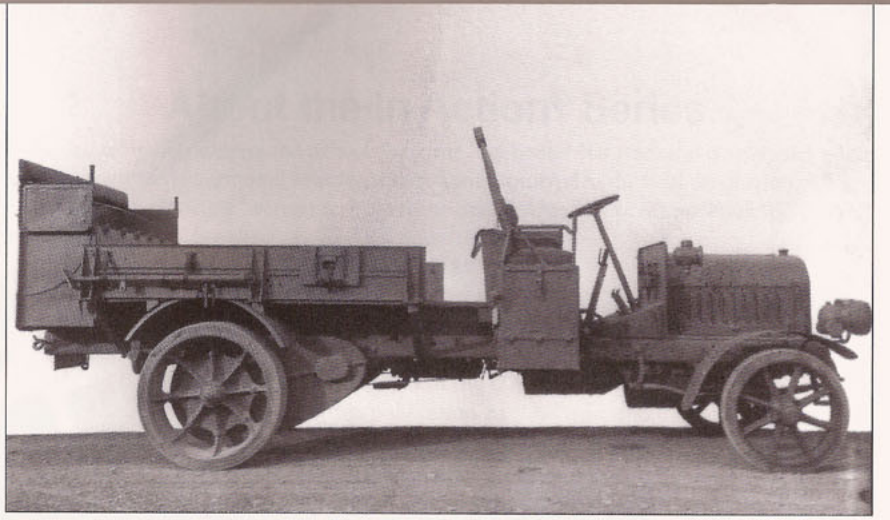
A 90mm autocannone in action in early 1942 with the crew on the firing platform. The utility of the camouflage net draped over the hood and forward portion of the cab is somewhat questionable in the flat desert environment devoid of vegetation. Although the crew on this gun seems prepared to fire at an aerial target, the raised sight on top of the recuperator indicates that the crew is also ready to engage any ground targets that might present themselves. The 90/53 gun was absolutely deadly against ground targets but its bulk and high silhouette made it an attractive, high-value target for Allied fighter bombers. Despite the fact that it was a dual-purpose gun, it was much less capable of engaging fast-moving fighter aircraft than it was against slow-moving grounds targets that it could engage at extended ranges. This photograph was taken while the autocannone was in action at the beginning of the battle that led to the capture of Ṭubruq ("Tobruk") by Axis forces and the following advance to al-'Alamayn ("El Alamein").

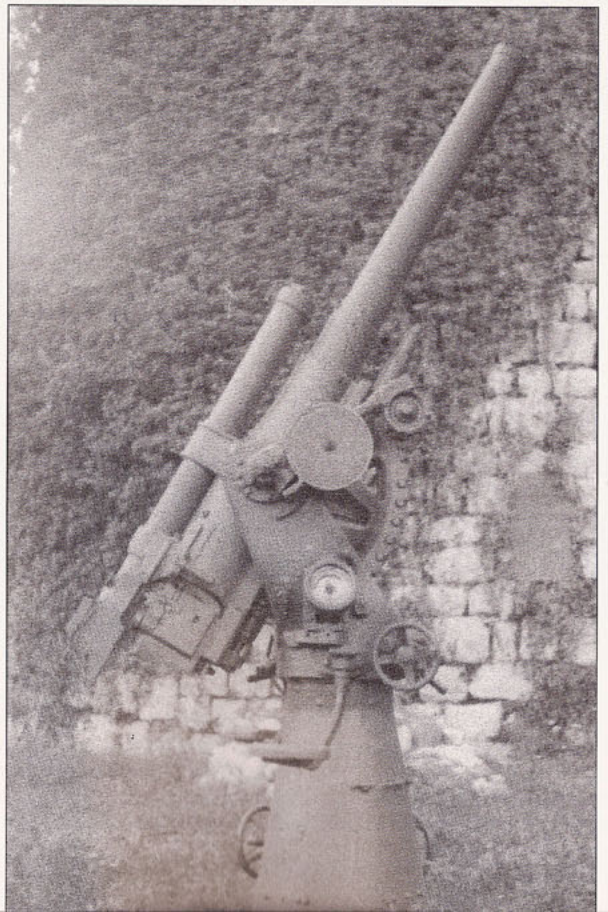
Introduction

The Italians already had experience with truck-mounted gun systems (autocannoni) prior to their entry into World War I. Well before the conflict engulfed Europe, Italy had been among the first to understand that the emergence of aircraft as a weapon represented a new threat dimension in military operations. This belief was fostered and reinforced by their own direct experience with air operations during the Italo-Turkish war of 1911-1912 in Libya, when the Italians were the first to use aircraft in reconnaissance operations and were the first to drop a bomb (on 1 November 1911) on enemy troops. With their well-established automotive industry, the Italians began to think about mounting guns on modified truck chassis to produce mobile antiaircraft systems as early as June 1913. Between 1913 and Italy's entry into the war in May 1915, the Italians mounted a German Krupp 75/27 antiaircraft gun on a truck chassis on an experimental basis. This was the genesis of the autocannone (the plural is autocannoni), or gun/truck combination, in Italy. The onset of the war, which saw Italy and Germany on opposite sides, put an end to dealing with Germany for acquisition of the Krupp guns, but by September 1915 Italy had begun to field mobile air defense batteries consisting of the Mod. 1906-1915 75/27 gun mounted on a modified and strengthened Itala X heavy truck chassis. The Mod. 1906-1915 gun was produced by the Arsenale Costruzioni Artiglierie di Napoli (Naples Artillery Arsenal) based on the recommendations of the so-called Commissione Krupp (Krupp Commission, which had been involved with acquisition of the original Krupp gun from Germany), hence the abbreviation C.K. in the Italian designation of the gun/truck combination as the autocannone da 75/27 C.K. During the war, 27 batteries, with four or five guns per battery, were established. The total number of autocannoni da 75/27 C.K. produced during the war amounted to 165 systems, including reserve stocks.

In early 1915, just prior to Italy's entry into World War I, the Ansaldo company, which was engaged in shipbuilding and artillery manufacture, had offered to furnish the Regio Esercito (Royal Italian Army) with 47 102/35 guns originally earmarked for installation on Regia Marina (Royal Italian Navy) destroyers, 20 of which were to be fitted with large shields and mounted on the SPA 9000 C truck chassis. This coincided with the Regio Esercito's urgent need for development of a mobile heavy field artillery system, and was the first Italian use of truck-mounted systems in the field artillery role. Ultimately, 16 autocannone batteries were equipped with the 102/35 gun during the war, and a total of 99-105 mobile guns were produced. Because of their mobility, the guns proved effective in operations against Austro-Hungarian forces. However, following the war, in 1919 the guns were removed from the truck chassis and are believed to have been returned to the Italian Navy.

In 1916, as a private venture, Ansaldo produced three batteries (12 guns) of autocannoni using the 1913 Schneider 105/29 gun mounted on the SPA 9000 C truck chassis. They could be considered the first Italian dual purpose gun, presaging the World War II use of the truck-mounted 90/53. The Minister of War acquired them without the approval of the High Command, and the first system was delivered in August 1916, incorporating all of the improvements needed to eliminate the shortcomings that had been experienced





(Above) The Itala X heavy truck chassis served as the platform for the Krupp-inspired 75/27 CK gun. The Itala automotive manufacturing company, founded in 1906 by Matteo Ceirano, established a reputation for reliability when a 35/45 HP Itala car won the Peking to Paris road race in 1907. FIAT absorbed Itala in 1930.

(Left) This Krupp-style gun, made by the Naples Artillery Arsenal, was usually mounted on trucks. Sometimes, as during the Spanish Civil War (1936-1939), it was mounted on railway car platforms. Weighing 1,000 kg (2,205 lbs), its elevation ranged from 0° to +70°. Its muzzle velocity was 510 m/s (1,673 fps), and its range was 6,100 meters (6,671 yards) in the direct-fire mode, and 4,650 meters (5,085 yards) in the AA mode.

by the 102/35 systems. However, plans to expand the number of 105 batteries never materialized, and the three batteries were disbanded on 23 March 1919.

Another Italian initiative occurred in 1917 when a Krupp 75/27 Mod. 1906 field gun was modified for anti-aircraft use, on a Lancia 1Z truck chassis. The assembly was designated the 75/27 A.V. (anti velivolo, or anti-aircraft) system. The original contract was for 50 units to equip 12 batteries, but this was later scaled back to only 25 units (six batteries). The systems were delivered in the summer of 1918, but experience at the unit level was not satisfactory. The 75/27 guns were subsequently removed from the trucks and used in fixed installations. The trucks that were thus made available were fitted with the Vickers 40/39 naval cannon, but this solution also proved unsatisfactory. The Italian Army artillery branch then decided on a completely different approach, utilizing the Lancia 1Z chassis, with appropriate modifications, to transport the Model 1911 75/27 field gun (based on the famous "French 75," the French Déport 75mm gun) portee-style in the truck beds. The Italians made a clear distinction between artillery systems that were permanently mounted on the truck chassis (autcannoni) and normal field guns that were merely carried on the truck beds to provide mobility, which they designated as autoportate (truck carried). Mobility trials of the prototype portee arrangement proved satisfactory, and six batteries of truck-borne artillery were formed in late 1918. Between 1920 and 1928 the batteries were assigned to the Regiment of Batteries of Horse-drawn and Truck-borne Artillery (Reggimento Batterie a Cavallo ed Autoportate).

The Regio Esercito did not hold a monopoly on development of autocannoni, as during the war the Regia Marina also created two batteries (eight guns) of truck-mounted antiaircraft guns. The guns were Armstrong Model 1915 76/30 naval guns and were mounted on Fiat 18 B.L.R. trucks, facing to the rear. Both batteries were used primarily to defend Italian naval bases, although one battery was attached to the Regio Esercito late in the war.

A significant number the 75/27 C.K. autocannone remained in the inventory following World War I. Modernized to some extent, they soldiered on into World War II. Other Great-War-vintage systems pressed into service during World War II, in much smaller numbers, were the 76/30 R.M. and the 102/35 guns, both of which were mounted on the more modern Lancia 3 Ro or the Fiat 634 N chassis. The 76/30 R.M. was used in the antiaircraft role, while the 102/35 was used as a dual-purpose system, acquitting itself well in the antitank role and also as a conventional field artillery piece.

In addition to the autocannoni that had originally been employed in World War I and were subsequently updated and used operationally in World War II, the Italians also developed several types of series-produced autocannoni utilizing the excellent Ansaldo-Terni Model 39/41 dual-purpose 90/53 gun mounted on Lancia 3 Ro or Breda truck chassis. The 90/53 gun was the most widely deployed and used truck-mounted anti-tank system used by the Italians during the war. Originally a piece of naval ordnance, it was modified for use as an antiaircraft and anti-tank system and was extremely effective. It is often cited as being the best piece of artillery developed by Italy during the war.

The final category of autocannone developed by the Italians consisted of improvised or field-expedient systems that were realized by mounting various Italian guns, for the most

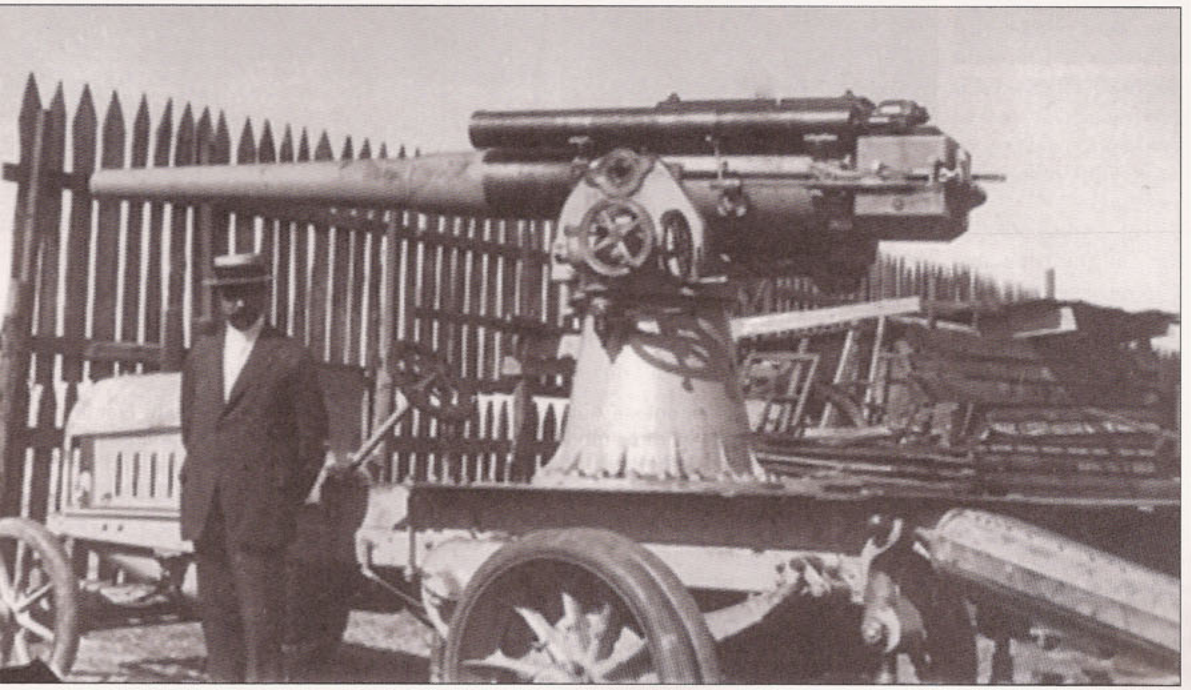
The autocannone da 75/27 C.K. was one of the earliest attempts made by the Regio Esercito to develop a mobile antiaircraft system. During the 1920s the Itala X truck chassis was replaced by a much more modern truck, the Ceirano CMA. The Ceirano company was founded by the same Matteo Ceirano who had founded the earlier Itala company.

SPA (Societa Ligure-Piemontese Automobili, founded in 1906 and merged with Fiat in 1925), produced several wartime models, including a sturdy heavy truck designated the 9000 C, a 5-tonne vehicle that was considered suitable to carry the 102/35 gun and its shield at a speed of 30 km/h (19 mph).

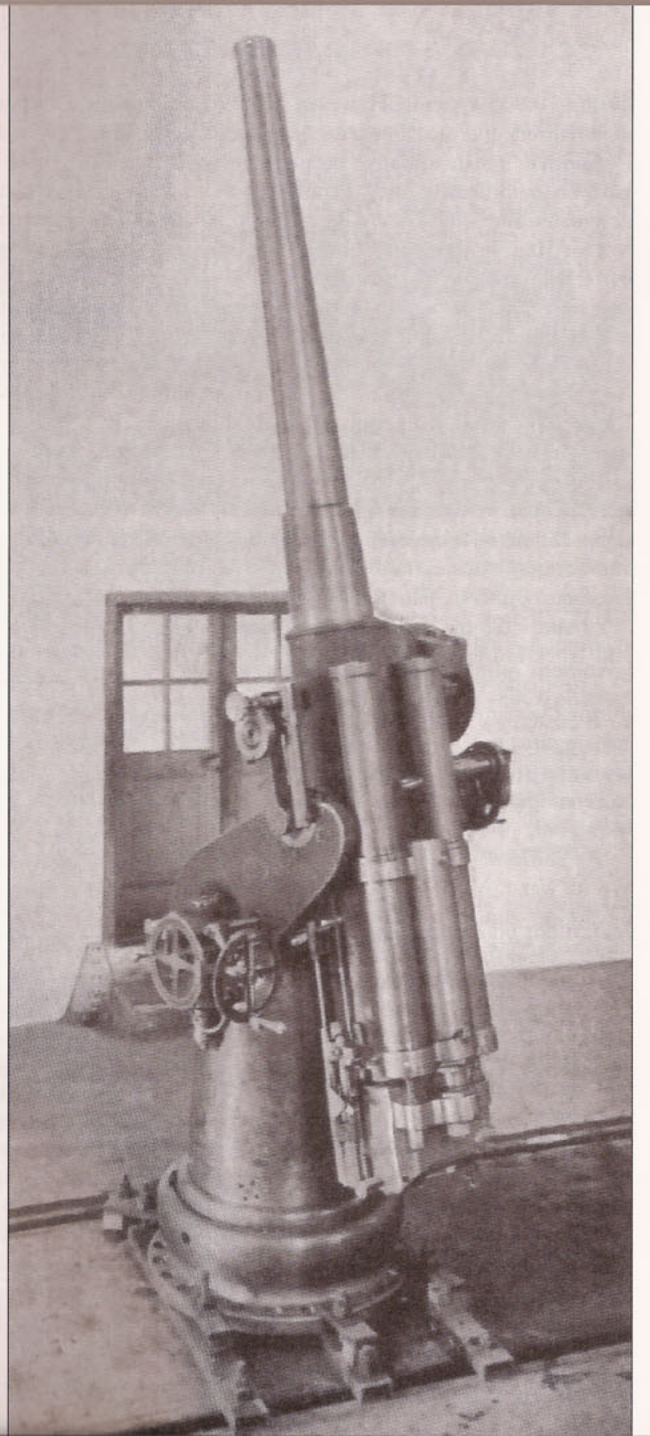
part obsolete but nevertheless effective, on either Italian or captured Commonwealth trucks. The armament on these improvisations ranged from 12.7mm (.50 caliber) aircraft machine guns to 102/35 guns. Ultimately, some 20 batteries of improvised mobile guns were formed in the North African theater of operations.

The Italians also developed two purpose-built light trucks (singular camionetta, plural camionette), the camionetta desertica Mod. 42 and the camionetta desertica Mod. 43 specifically for use in North Africa. Both could be fitted with either the 47/32 anti-tank gun or the 20mm Breda cannon; the Mod. 42 was also armed with the 20mm Solothurn anti-tank rifle.

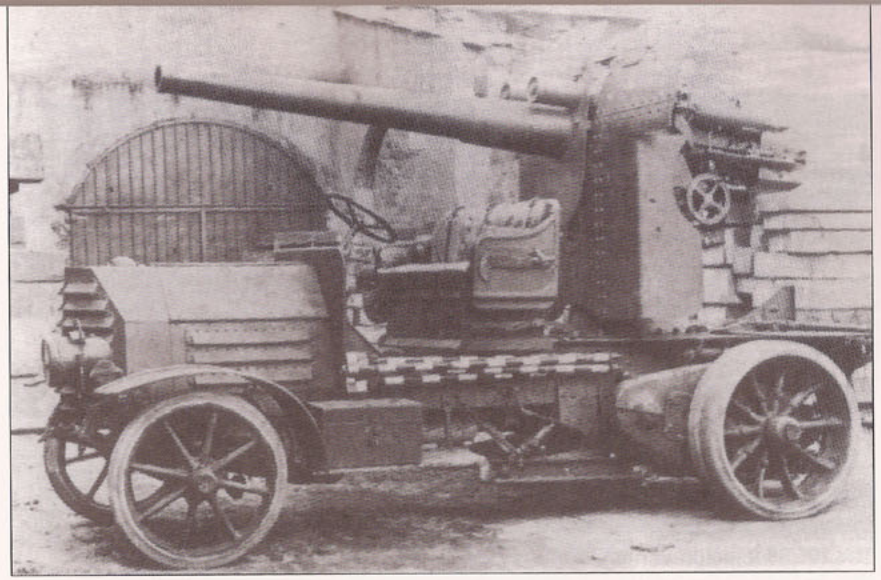
Mobile air defense for armored and motorized divisions, as well as for some infantry divisions, was provided by anti-aircraft guns, ranging in caliber from 8mm to 20mm, mounted on several varieties of truck. The 20mm Breda Model 35 and Model 39 cannons were mounted on SPA Dovunque 35, SPA 38R, and Fiat 626 trucks and generally were issued on the scale of two batteries per division in North Africa. As with the larger autocannoni, some of these antiaircraft systems were fitted in the field on captured vehicles.



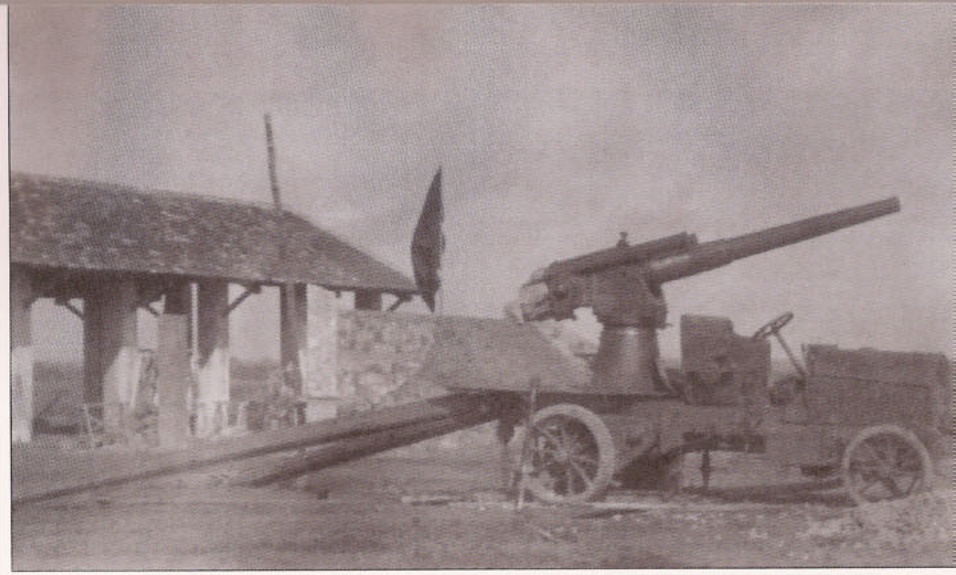
(Above) The prototype of the World War I autocannone da 102/35, the 102mm naval gun, still lacked the large gun shield fitted on production models of the weapon, and the SPA 9000 C truck chassis was in the sparsest of configurations. The fenders and armored engine covering had not been installed, nor had a driver's seat yet been provided. The near end of one of the long stabilizer trails is attached to the rear of the truck's frame.



(Right) The 102/35 naval gun normally mounted on Italian destroyers was provided by the Ansaldo firm to the Italian Army to be mounted on a truck chassis to provide a mobile artillery capability. The 102mm gun had a range of 10,900 meters (11,920 yards) and fired a 13.35 kg (29.4 pound) shell.



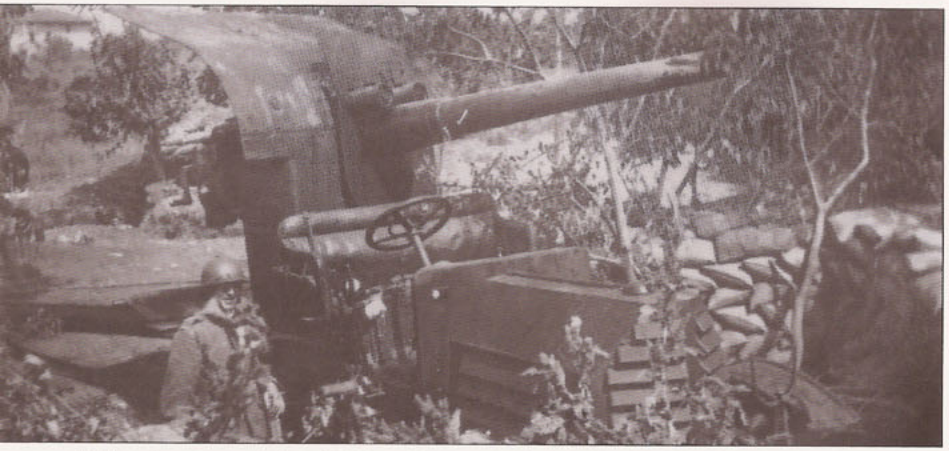
This autocannone is in traveling configuration, with the hinged crew platform at the rear in the raised position.



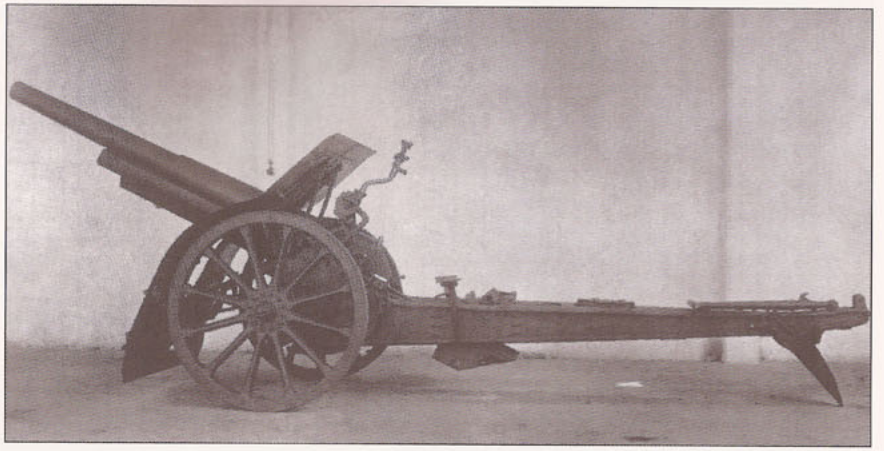
The recoil frame is lowered and the stabilizer trails fitted on this 102/35 autocannone without the gun shield. The stabilizer trails were carried on a separate SPA 9000 support truck when the gun was not in battery.

Two autocannoni of the first test battery a halt during troop testing in 1915. The gun muzzles and breech mechanisms have protective canvas coverings. This was the first of 16 batteries formed with the 102/35 gun.

The the two trail stabilizing arms are being fitted on this 102/35 gun of an experimental test unit. A second gun, with its breech still covered, is in the background.



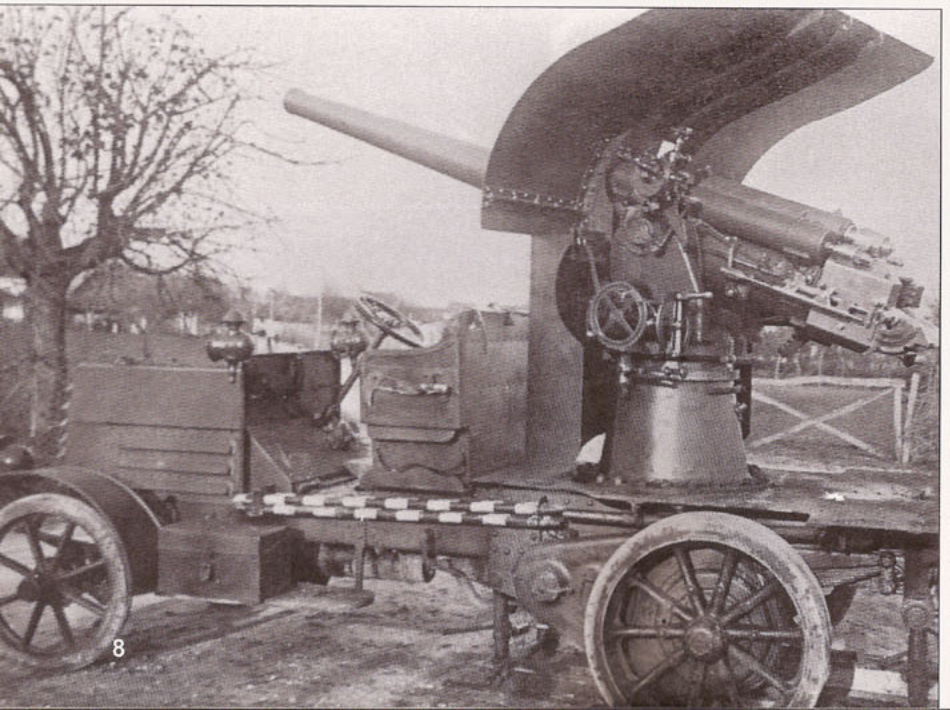
This autocannone is in a field position on the Italian front in 1917. The more exposed and vulnerable parts, such as the engine and driver's position, are protected by a parapet of sandbags. Tree branches help to camouflage the whole emplacement.

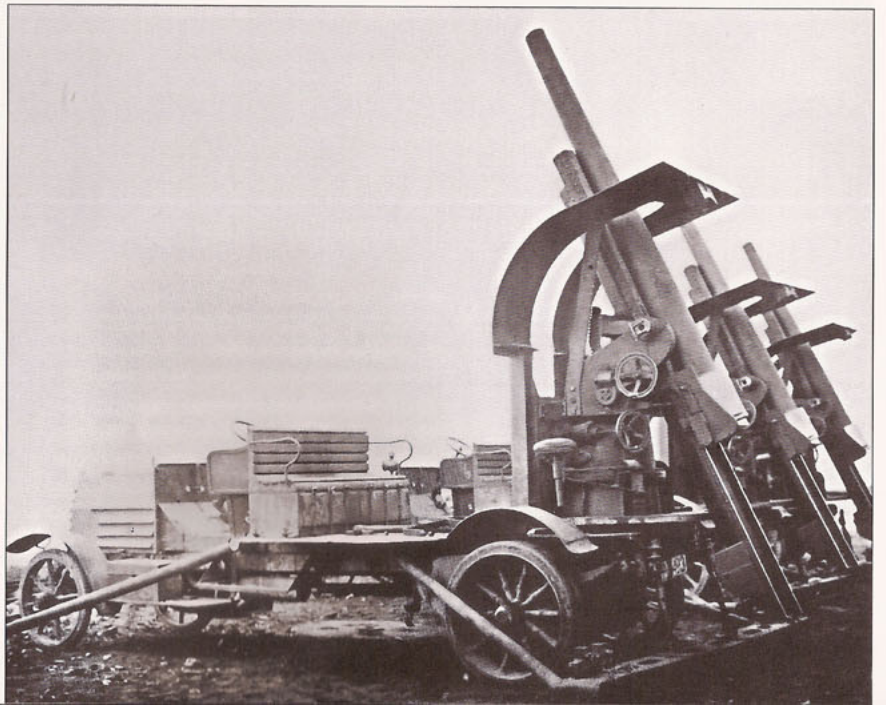


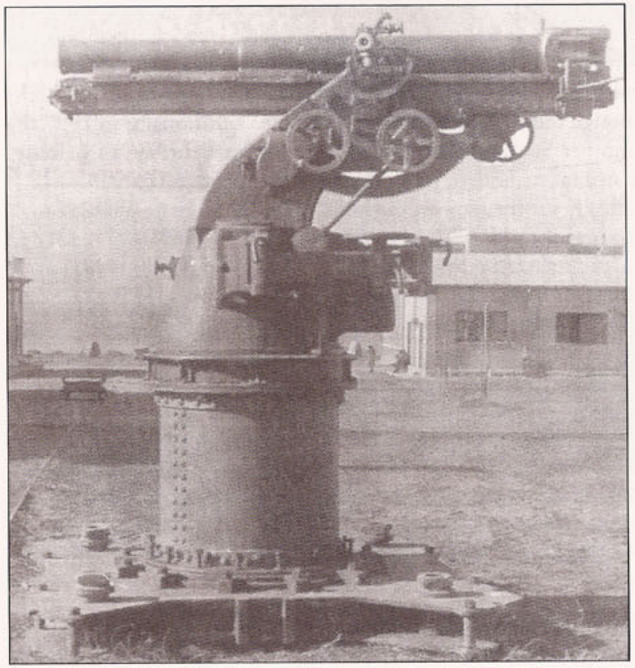
The 105/29 Ansaldo-Schneider was a popular Italian heavy field gun from the 1914-1918 War. In 1942-43 the 2,470 kg (5,445 lb) weapon was fitted with pneumatic tires and towed by a high-speed tractor, and fired tank-destroying hollow charge ammunition.

The gun truck in firing position, with the crew platform extended and the rear frame lowered. The frame that was lowered directly onto the ground provided a stable platform and eliminated the need for outriggers as stabilizers.

The autocannone da 105/29 is mounted on a SPA 9000 C chassis. The 105mm gun was mounted well to the rear of the truck, whereas the gun on the 102/35 autocannone was mounted towards the center of the truck body.

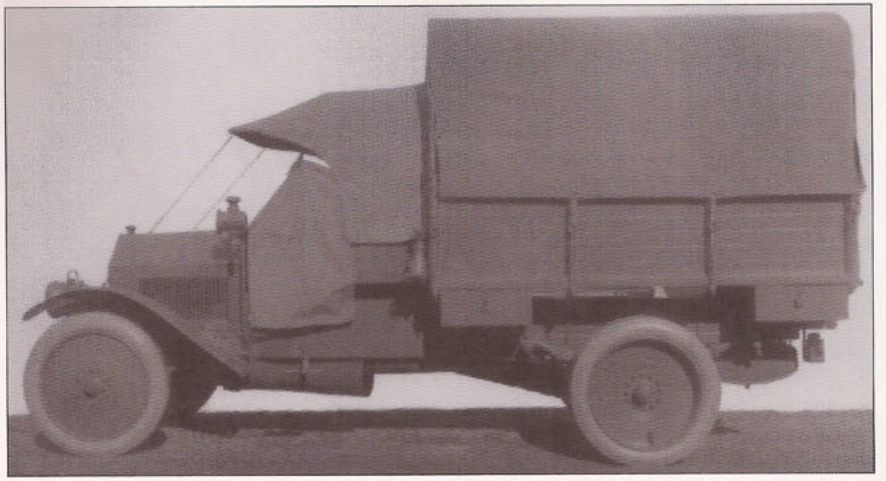






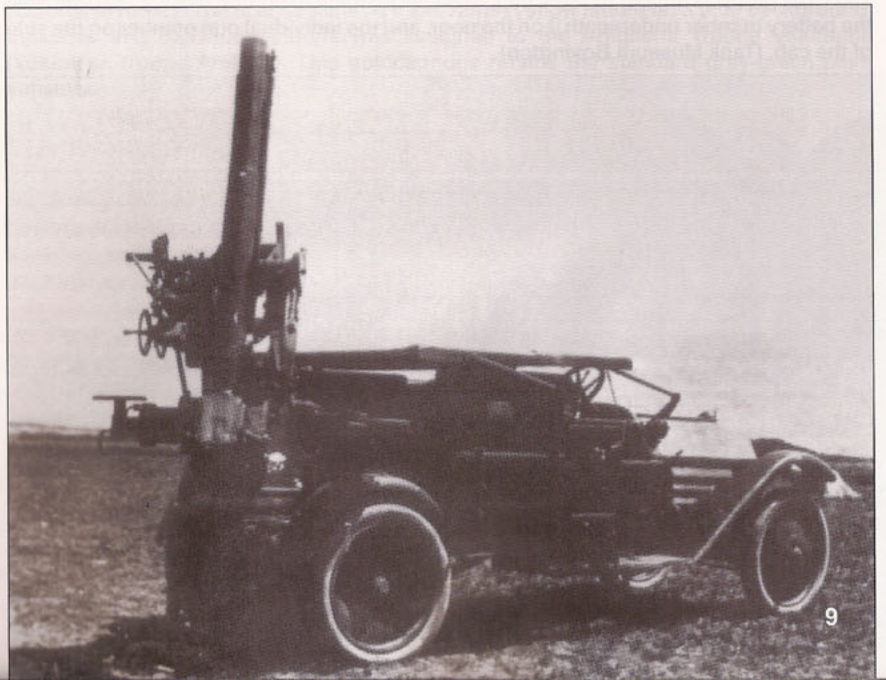
(Left) The 75/27 mod. 906 (Model 1906) field gun was the basis for the 75 Anti Velivolo A.V. (Aniti Velivolo or anti-aircraft) gun. Operational use of the 75 A.V. was short lived, as it was not effective in field use.

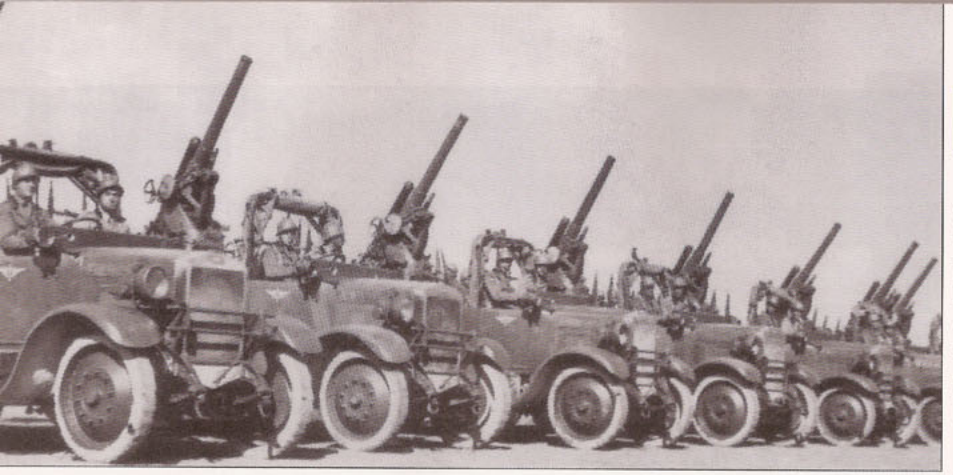
(Below) A battery of autocannoni da 75 A.V. on a mountain road in 1918, with their roofs raised. This mobile gun system was not popular with its crews and was not an effective weapon.



The Lancia 1Z truck chassis was the vehicle chosen for the 75/27 A.V. system. The 1Z was easily identifiable by its solid wheels. The same chassis was used as the basis for the Lancia 1ZM armored car that served in World Wars I and II.

The 75/27 A.V. was the only series-produced Italian autocannone of World War II not fitted with outriggers, stabilizer jacks, or stabilizing trails or spades. All recoil forces were transmitted to the vehicle frame. The canvas roof of the vehicle is collapsed.





In 1927 the Ceirano 50 CM heavy truck chassis was chosen as the platform for a new series of 75/27 CK autocannoni. It also replaced the vintage Itala X chassis on the World War I systems. Some 75 CK batteries appear here shortly after their conversion to the new CMA chassis, about 1932. The white symbol of the AA artillery groups is painted on the cab doors. The early Ceiranos had only one headlight mounted on the right-hand side of the truck; later trucks were fitted with a second headlight as well.

A group of autocannoni da 75/27 CK parades through Benghâzî, Libya, shortly before the outbreak of World War II. The vehicles are painted in standard gray-green livery. Group and army corps designations are stenciled in white on the hoods of the vehicles. Another 75/27 CK group is known to have had, in addition, the antiaircraft artillery emblem with the battery number underneath it on the door, and the individual gun number on the side of the cab. (Tank Museum Bovington)

Autocannone da 75/27 C.K.

After hostilities ceased in 1918, the Italians decided to retain the surviving 75/27 C.K. systems in service, even though they realized they were obsolete. Additionally, in 1927 the Regio Esercito ordered another 56 guns. These guns would form a further 14 batteries that were to be mounted on a more modern truck chassis, the Ceirano 50 C.M.A., which had been developed specifically for the gun. At the same time, the Ceirano chassis began to replace the Itala X chassis of the older surviving systems. In 1932 and1933 the Regio Esercito staff gave some thought to mounting the 75/27 C.K. on the Fiat 18 BL truck chassis (a good number of which were in storage as war surplus), but this vehicle was being phased out of the army's inventory and the idea was never acted upon.

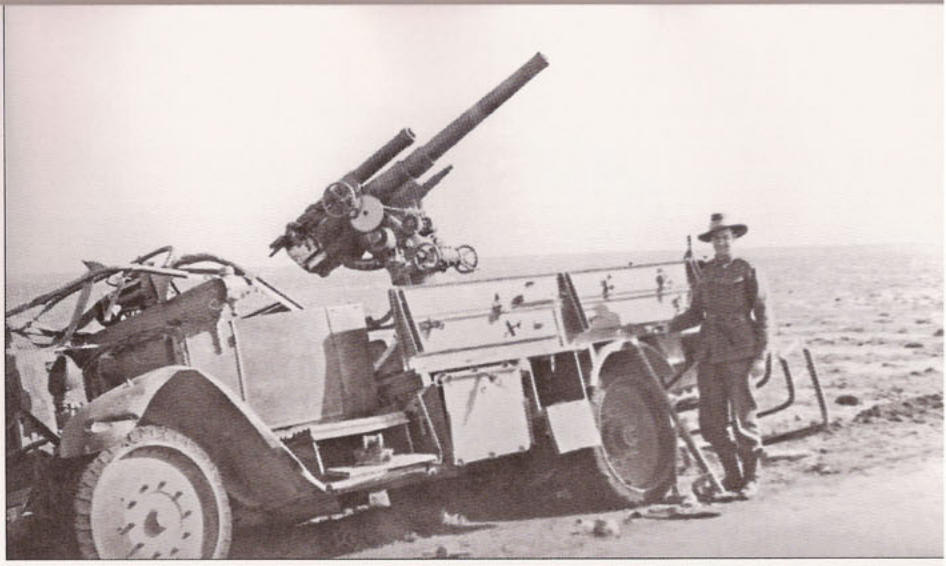
In 1935-1936 two groups (16 guns) of the 75/27 C.K. were deployed to Italian East Africa, although the air threat there was minimal. Later, five batteries were sent to the Comando Truppe Volontarie (Volunteer Troop Command) in Spain. Though deemed to be of limited capability, they were retained due to the lack of more suitable equipment.

By far the largest number of Italian truck-mounted artillery systems employed during World War II were the World War I vintage 75/27 C.K. systems, still mounted on the Ceirano 50 C.M.A. truck chassis. The system formed the mobile anti-aircraft groups of each army corps. Some 75 C.K. groups went to Libya in 1937, while two (I and II) were already in Italian East Africa. In late 1939, prior to Italy's entry into World War II, the Regio Esercito still had some 166 autocannoni da 75/27 C.K. in active service, despite their many shortcomings. In 1938 several documents listed their inadequacies, including a high center of gravity, overall size of the system, high profile, poor off-road performance, low muzzle velocity due to the short barrel length, limited elevation, slow road speed, and tendency to bog down in soft terrain. Some attempts were made to improve system performance by upgrading range-finding and sighting systems as well as command and control support equipment. In November 1940, there were three 75/27 C.K. groups in Libya (the VI, XI, and XX), each with three batteries. In 1940, one group was assigned to the Italian armored brigade that ultimately was destroyed by Archibald Wavell's offensive in early 1941. It is difficult to comprehend that the 75/27 guns were not used in an anti-tank role to defeat the few Matilda Mk2 infantry tanks opposing them at the time. In mid-1941 there were 11 operational groups equipped with the 75/27 C.K., two of which were in Albania and Greece. Several infantry divisions received one group each of this system for mobile air defense, although in 1942 some of these groups were stripped of their drivers and transformed into fixed air defense sites. A few autocannone da 75/27 C.K. that had been captured by the British in North Africa subsequently were recaptured by the Germans, who used them in the anti-tank as well as air defense role.

Despite, or perhaps due to, the fact that such a large number of the 75/27 C.K. systems were available, the Italians never replaced the Ceirano truck as a platform for the guns. Of all the truck-mounted artillery systems used by the Italians in the desert, the Ceirano was the oldest and least capable platform in use. Other guns of similar vintage, such as the 102/35 and the Navy's 76/30 guns, were mounted on much more modern vehicles such as the Lancia 3 Ro and the Fiat 634N Diesel-engined trucks.

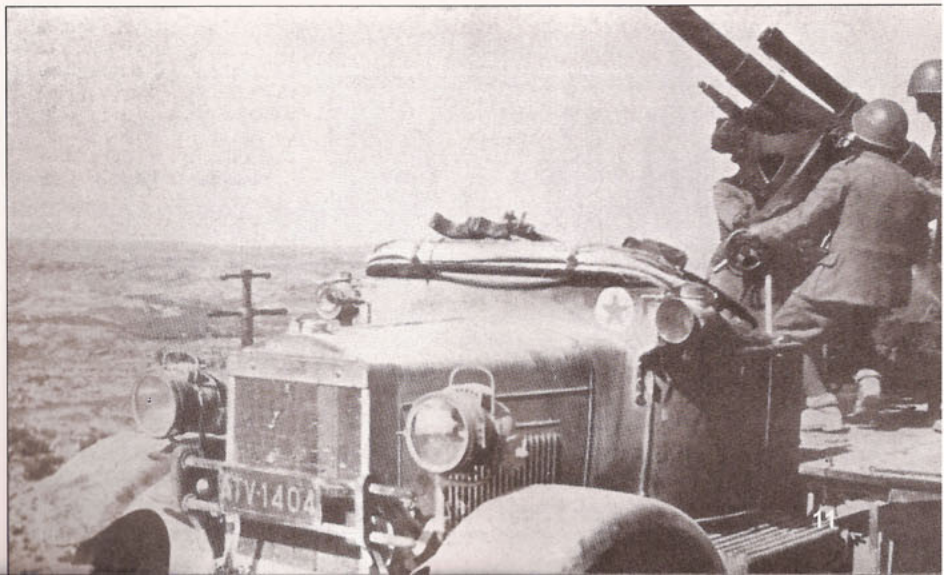
75/27 CK systems belonging to the 1 Gruppo of the 2nd Anti-aircraft Regiment during the inter-war period, on the Ceirano CMA chassis. The CM was one of the Regio Esercito's standard cargo trucks and served throughout the war, as well as into the post-war period.

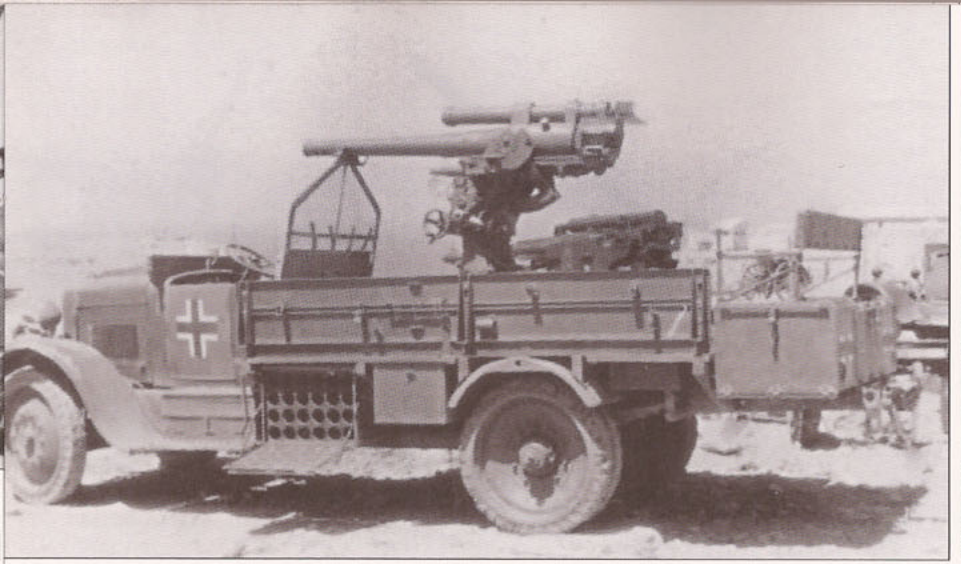
In 1940 the Libyan theater witnessed the initial employment of the Ceirano 50 CMA with their 75/27 CK (Commissione Krupp) guns. Some 75 CK groups had been sent to Libya as early as 1937, and two groups were already in East Africa. In the fall of 1940 one group was assigned to the Brigata Corazzata Speciale (Special Armored Brigade), an improvised armored unit that fought unsuccessfully against Wavell's forces and was defeated and destroyed in February 1941.



An Australian officer inspects a wrecked autocannone da 75/27 CK outside al-Burdī ("Bardia"), Libya, possibly in January 1941, when the area located near the Egyptian border, fell to the Allied forces. The wrecked cab and raised firing platform sides suggest that the autocannone may have been attacked while on the move. (Australian War Memorial)

The 75/27 CK was deployed to Spain as part of the Italian contingent supporting Franco's Nationalist forces. The license plate ATV 1404, with yellow letters on a blue background, indicates that this autocannone was assigned to the Artiglieria Truppe Volontarie (Volunteer Troops Artillery). This autocannone retains the standard gray-green paint scheme.





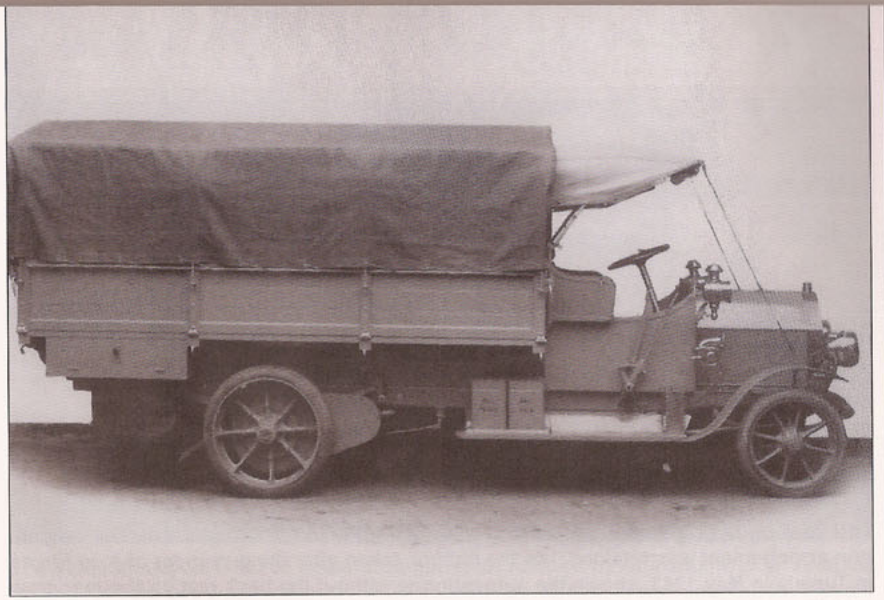
Only twelve 75/27 CK systems were still in North Africa by September 1942. The remainder (107) were located mainly on mainland Italy and on Mediterranean islands; eight were in the occupied Greek territories and five in the Aegean Isles. One Gruppo (the VIII) fought in Sicily in July 1943. At least one of these autocannoni had been recaptured by Rommel's Panzer Gruppe Afrika, only to fall once again into enemy hands for the last time, shown devoid of the tools normally fixed to the side panels. One of the ammunition boxes is open (the vehicle could carry a total of 96 rounds on board). The gun is in the travel position. A towed 75/46 Model 34 antiaircraft gun is in the background.

Italian Navy personnel manning a battery of 76/30 guns in static defense positions in Venice. These guns saw action against Austrian bombers attacking that city during World War I.

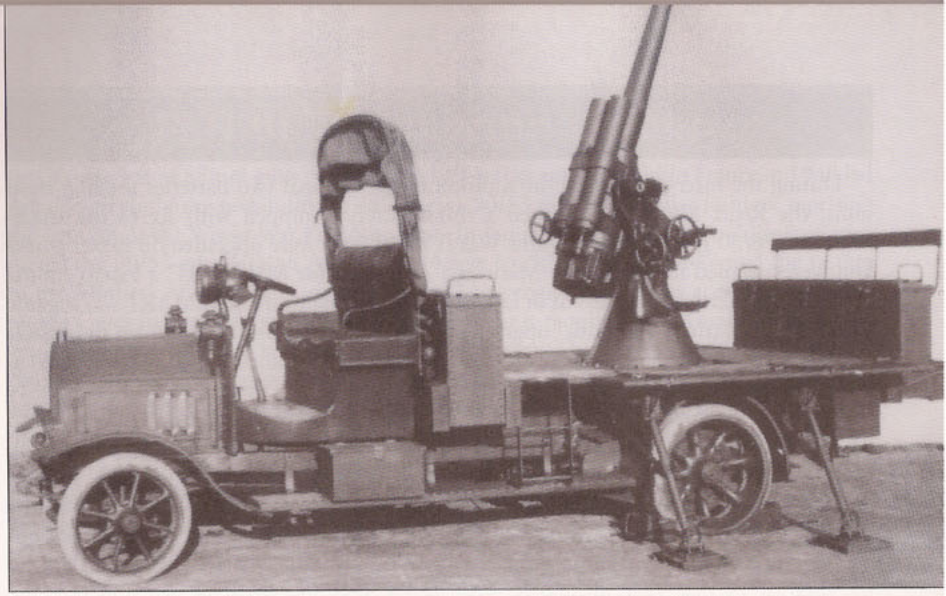
Protection of mobile columns was frequently provided by truck-mounted 20mm AA cannons that could intervene immediately against low-level air attacks. For more effective protection, the 75 CK guns were deployed along the route of march, leapfrogging other guns already in position (by moving one battery ahead while the other remained ready to fire). The Ceirano CMA was very slow on the road (25-30 km/h, or about 15-22 mph) and had no cross-country capability. By 1940, the Ceirano chassis was quite dated, but the Italians did not expend any resources to improve mobility of the 75/27 guns by mating them with more capable platforms such as the Lancia 3 Ro or Fiat 634N chassis.

Ceirano 50 CMA, 1927

Manufacturer:	Ceirano
Weight	4,720 kg (9,414 lbs) (w/o gun and ammunition)
Length:	6,010mm (19'9")
Width:	2,200mm (7'3")
Height:	2,700mm (8'10") (with canvas top)
Ground clearance:	320mm (1'1")
Engine:	Ceirano Type 50 C, 4 cylinder gasoline, 4,712cc
Horsepower:	53 at 1,900 rpm
Fuel capacity:	124 liters (33 gallons)
Maximum speed:	25 km/h (15.5 mph)
Maximum range:	235 km (146 miles)
Wheelbase:	3,600mm (11'10")
Front track:	1,630mm (5'7")
Rear track:	1,630mm (5'7")
Tires:	175x720.5 semipneumatic
Turning radius:	6,300mm (20'8")
Fording:	Not available



The FIAT BLR heavy truck (4-tonne load capacity) was widely used by the Italians during World War I and with minor modifications served into the early 1940s. It was powered by a four-cylinder FIAT Model 64 CA 5,650cc (345 cubic inch) engine developing 40 horsepower, had a four-speed chain drive transmission, and had a maximum road speed of 25 km/h (15.5 mph).



This autocannone da 76/30 R.M., ready for delivery in 1917, maintains an arrangement similar to that of the 75 C.K. model. The Italian-produced Armstrong Model 1915 76/30 naval gun was mounted on a FIAT BLR 4x2 truck, and had a crew of eight naval artillerymen. The Regia Marina formed two batteries equipped with this system during World War I, and following the war also formed a third battery.

Organization

Autocannoni normally were organized as batteries (batterie) and groups (gruppi). A standard battery consisted of four guns, although some variations could be encountered with as few as three and as many as six guns. Three batteries formed a group with 12 guns. The autocannone batteries equipped with the 75/27 C.K. systems normally were assigned to the artillery regiment of army corps or of infantry divisions and were used in the antiaircraft role for which they were originally designed. These batteries were numbered using Arabic numerals, while the groups of batteries bore Roman numerals. The batteries equipped with the 90/53 dual-purpose gun were paired together to form groups, and these groups were designated by Roman numerals in the 500 series (designations beginning with the letter D). A typical 90/53 battery consisted of four autocannoni , one reconnaissance vehicle, six heavy trucks (four of which were ammunition trucks carrying 210 rounds each), three 2 ½-ton SPA 38R light trucks, three one-ton SPA CL 39s or, in North Africa, light desert trucks (two for patrol duties and one fitted with machine guns), two light trucks for the generator and for the cable system, one medium truck for the Viberti fire direction complex, six motorcycles, two machine guns, and two radio stations. Personnel consisted of four officers, seven NCOs, 105 artillerymen, and 31 drivers. Vehicles that were improvised using Lancia, Fiat, SPA, or captured British vehicles mounting armament that varied from 20mm Breda cannons, to 65/17, 100/17, or 102/35 guns were organized on an ad hoc basis based on the availability of systems as well as on local circumstances. One of the two 102/35 batteries (the 1st Battery) consisted of three autocannoni, two or three Fiat 666N trucks as ammunition carriers, a Fiat 666N truck with the fire direction center and a 13.2mm Breda heavy machine gun, a Fiat 626 water truck, a kitchen truck, and an ambulance. Personnel strength of the battery was three officers, three NCOs, and 62 militia artillerymen. The "flying batteries" equipped with captured British vehicles varied in size, usually consisting of four Morris CS8 trucks with 65mm guns; when in pursuit of LRDG patrols, Italian patrols usually consisted of three Morris gun trucks and two Ford F15 anti-aircraft vehicles.

This autocannone da 76/30 R.M. is in battery. The Armstrong Model 1915 76/30 naval gun was mounted on a FIAT BLR 4x2 truck and crewed by eight naval artillerymen.

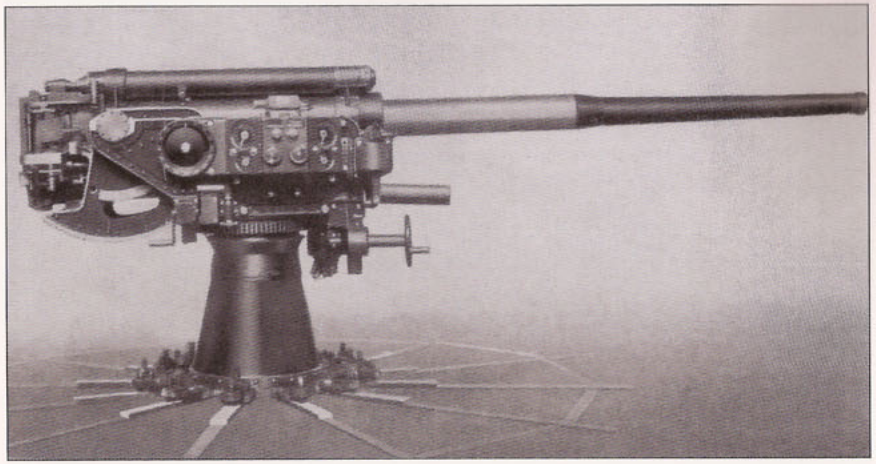
Autocannone da 76/30 R.M.

During the inter-war period, in addition to the original two batteries totaling eight guns, the Regia Marina constituted a third battery equipped with six of the truck-mounted 76/30 guns. During World War II all 14 guns were upgraded on newer trucks and were assigned to the Milizia Marittima Artiglieria (or MILMART, a Fascist militia artillery organization) and served in Libya. Organizationally, the MILMART was organic to the Regia Marina. The initial upgrade consisted of mounting the guns on the Lancia Ro truck chassis (the Lancia Ro was the predecessor of the Lancia 3 Ro, and was rated at 64 horsepower), but in 1942 the guns were mounted on the more powerful Fiat 634 N (the N in the designation indicated nafta, or Diesel) truck chassis rated at 80 horsepower. The three batteries equipped with the 76/30 gun were the 13th and 14th Batteries (each with five guns), and the 16th Battery, with four guns. One section of the 14th Battery, consisting of two guns mounted on Lancia 3 Ro trucks, was assigned to the 60th Sabratha Infantry Division, and the 16th Battery was assigned to the 16th Pistoia Infantry Division, and served with the division until its capitulation in Tunisia. As late as March 1943, of the total of 14 that were ultimately built, seven, now mounted on Fiat 634 N truck chassis, were still operational with the Centauro Armored Division.

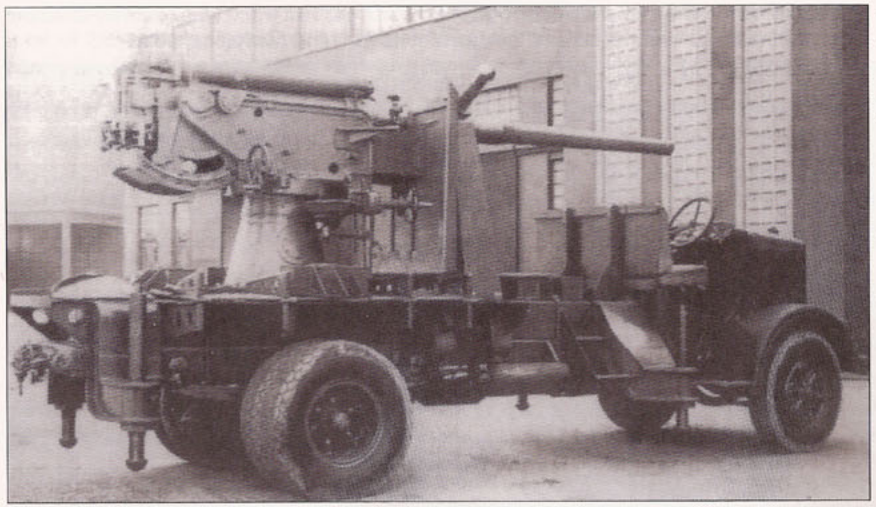
Two 76/30 guns of the 13th Battery are in action at Marsà Maṭrûḥ, Egypt, in August 1942. Although assigned to support Italian Army units, these systems belonged to the Italian Navy and were manned by naval militia personnel. These guns are mounted on the Lancia Ro chassis, but were subsequently further upgraded by mounting on the more modern and capable Fiat 634N chassis. The platform is fitted with outriggers which have been deployed to stabilize the gun while firing. (Ufficio Storico)

This rare photograph shows the 76/30 mounted on a Lancia Ro chassis. The original gun arrangement was retained, but the picture, taken after the surrender of Axis forces in Tunisia in May 1943, shows the autocannone without the back rest on the rear crew seat. One of the double tires on the rear axles is also missing. The identification plate is RM (Regia Marina) 72. Some of the 76/30 guns were employed in North Africa (1941-1943) after being mounted on more modern vehicles. Few records concerning these autocannoni have survived.

Some 76/30 guns were later mounted on the Fiat 634 N chassis, with a layout very similar to that of the 102/35 gun. British fire has destroyed this autocannone and caused it to burn as well. The barrel rest and travel lock appear differ from the normal configuration.



The static Model 39/41 90/53 antiaircraft gun is developed by Ansaldo in 1939. Another variant for field use was similar to the German Krupp 88/55 and was adapted for tactical use much like its German counterpart.



The prototype of the truck-mounted 90/53 dual purpose gun – initially designated the "high-power anti-tank mobile gun" – on the Lancia 3 Ro chassis, appears on 12 March 1941. A muzzle velocity of 840 m/s (2756 fps) gave the 10 kg (22.2 pound) HE shell a range of 17,465 meters (19,100 yards). The practical rate of fire was between 15 to 20 rounds per minute. The elevation was from slightly below horizontal to + 85°, and traverse was 360°. An AP shell was reported to penetrate 112mm (4.41 inches) of plate at a 30° angle at 457 meters (500 yards) and 140mm (5.53 inches) at the vertical. At 1,830 meters (2,000 yards) the respective penetrations were 3.15 and 4.2 inches.

Autocannoni da 90/53

German use of 88mm guns mounted on half-tracks against tanks in France in 1940 led Ansaldo to study the possibility of utilizing its 90/53 gun in a similar fashion, reprising the concept of the World War I autocannone. In January 1941 an early Ansaldo initiative mated the 90/53 gun with an Alfa Romeo heavy truck chassis and presented the system to the Ministry of War for its consideration. The general design was accepted favorably by the Chief Inspectorate of Technical Services, but it required that Ansaldo modify the system to utilize the Lancia 3 Ro chassis as a platform. The differences between the two chassis types were such that Ansaldo engineers had to completely redesign the proposed autocannone. This design may have been influenced by the Soviet YaG-10 6x4 truck mounting a 76.2mm L50 Model 31 dual purpose gun paraded in Red Square in 1940.

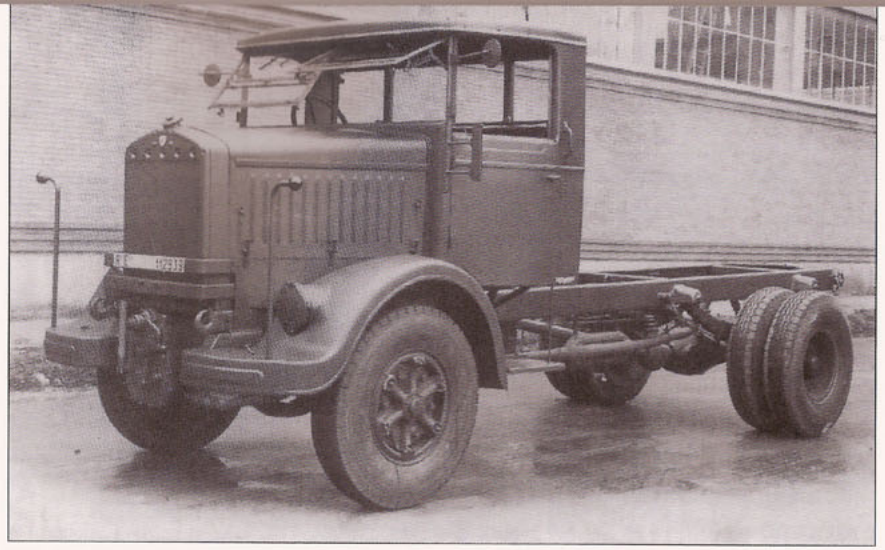
Even as the Ansaldo venture was unfolding, in a document dated 20 January 1941 the General Staff of the Regio Esercito had already determined the need for at least two basic versions of a mobile 90/53 gun to engage enemy tanks at extended ranges. The General Staff called for installation of the 90/53 gun on a standardized military truck chassis, or alternatively on the chassis of an all-terrain truck (6x6), as well as for the successive development of a 90/53 tracked self-propelled gun (ultimately realized as the M 41M self-propelled gun mounted on an M.41 tank chassis). Ansaldo was directed to mount the 90/53 gun on both the 4x2 Lancia 3 Ro chassis and the 6x6 Breda Dovunque chassis, while following on with development of a tracked self-propelled system. Ansaldo appears to have given precedence to development of the Lancia 3 Ro prototype, which was completed in an extremely short time (6 February 1941) and underwent firing trials on 10 February 1941. An initial order for 30 systems on the Lancia chassis followed on 10 March, which on 1 April was reduced to only 10 systems (to equip two batteries, with two systems in reserve). In May, 70 systems mounted on the Breda 51 all-terrain chassis were ordered, although in September the number on the Breda chassis was reduced to 50, while the order for systems mounted on the Lancia chassis was again increased to 30. At the same time orders were placed for 64 ammunition resupply carriers, 16 command vehicles, and 16 support vehicles. On 2 December the final order was placed for a further 40 Breda systems (bringing the total for the Breda mounted systems to 90) and increasing the number of ammunition carriers to 96 and support vehicles to 24, but reducing the number of command vehicles to 12, enough to equip 12 gruppi.

In 1941 all 30 of the Lancia 3 Ro autocannoni were delivered, as well as 20 on the Breda chassis. By May 1943 the entire order for the Breda systems had been completed, resulting in a total of 120 truck-mounted 90/53 systems, enough to equip the planned 12 groups (24 batteries), with two spare systems per group. As late as mid-July1943 the Army Staff planned the acquisition of a further 96 90/53 autocannoni on the Breda 52 chassis and 60 on the SPA Dovunque 41. It is somewhat curious that despite plans to more than double the number of 90/53 truck-mounted systems, of the 12 groups equipped with 90/53 systems, only four appear actually to have been assigned to divisional level artillery regiments, and one to an expanded antiaircraft artillery group, and to have been employed operationally. Thus, well over half of the autocannoni da 90/53 (all mounted

on the Breda 52 chassis) failed to see any combat action.

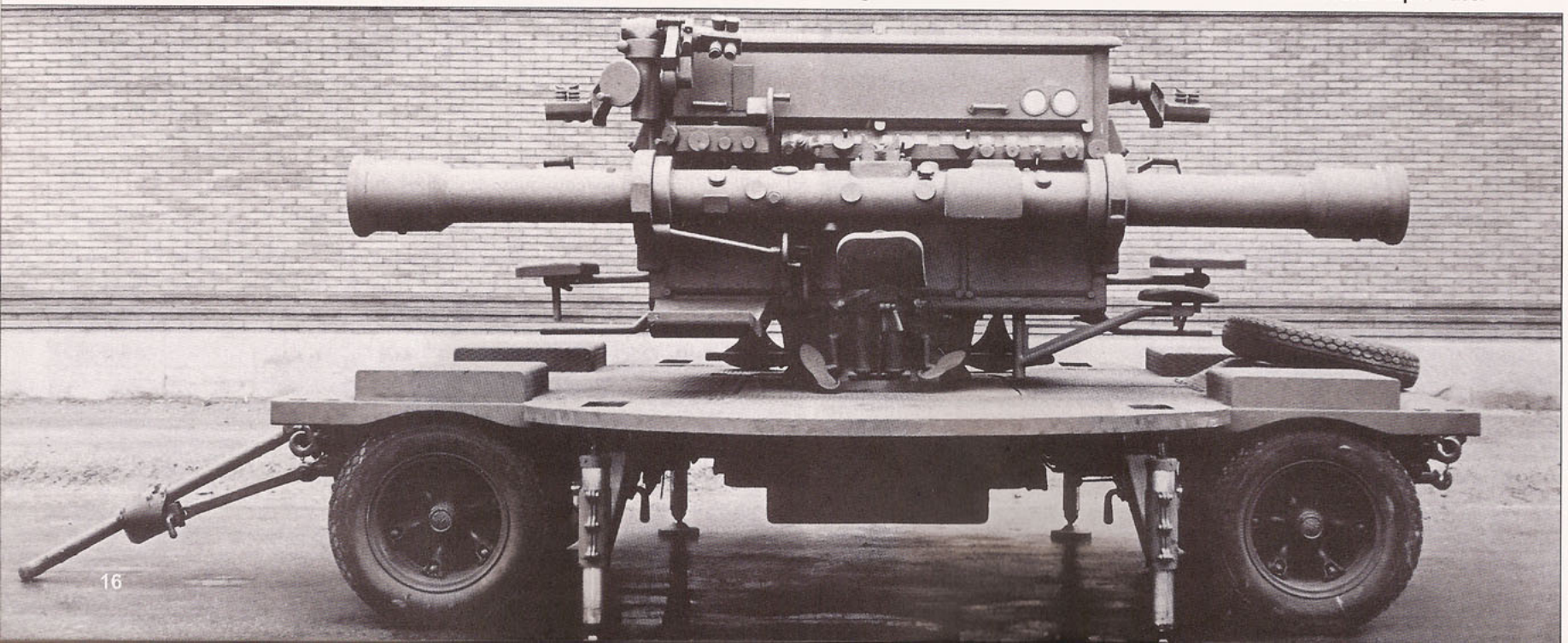
The first four batteries (DI battalion of the Ariete Armored Division and DIII of the Littorio Armored Division) were deployed early in 1942, but did not achieve satisfactory results, due primarily to their high silhouette and excessive visibility. Another battalion, the DII, was formed for the Centauro Armored Division that fought in Tunisia. Several other units received the 90/53 gun on the 6x4 Breda "colonial" chassis, one of which, the DV, fought in Sicily shortly before Italy's surrender.

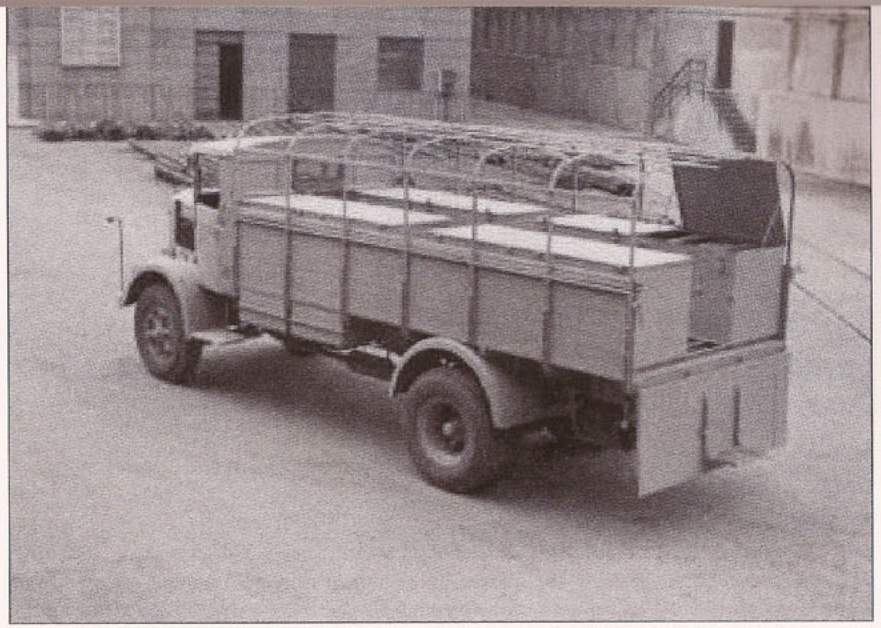
A number of other autocannoni utilizing the 90/53 gun on a variety of different truck chassis were also under consideration, as well as possibly mounting the 149/12 and 149/13 guns on Lancia 3 Ro and SPA 6x6 chassis. A special Breda chassis was developed (in prototype only), the Breda Tipo 102, which was partially armored and which mounted the 90/53 gun on a specially designed low-profile chassis. Plans were also under way to mount the 90/53 on a Breda Model 61 half-track chassis, but neither the Tipo 102 nor the half-track mount progressed past the prototype or design stage, respectively. In 1944, it is possible, but not confirmed, that Viberti built a few examples of the 90/53 mounted on a SPA Dovunque 41 fitted with an armored cab.



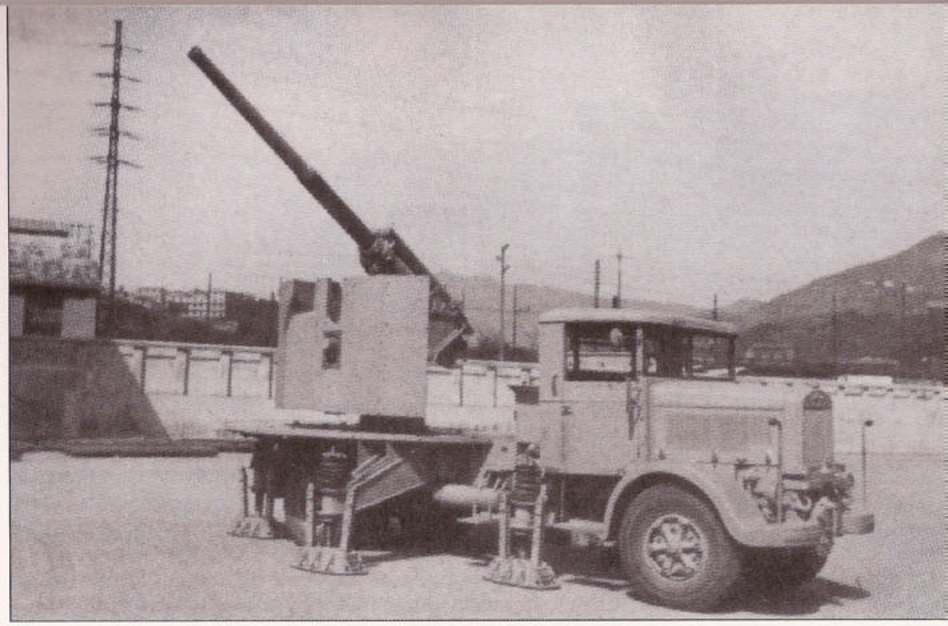
(Above) The final body variant produced for the autocannone on the Lancia 3 Ro by the Viberti company of Turin. The side hood panels have larger louvers, but in Africa they often were removed to improve engine cooling. A new type of muffler was added. The rear openings of the cab are closed by rolled curtains. The truck was referred to as the "King of the Road' and the "Giant" because of its size and overall capabilities.

(Below) The B.G.S. (Borletti-Galileo-San Giorgio) fire predictor for the 90/53 anti-aircraft batteries is mounted on the trailer produced by the Viberti company of Turin. It was effective against targets flying as fast as 720 kilometers per hour (447 mph) at a maximum altitude of 30,000 feet. It could be used in conjunction with the Volpe (Würzburg) radar supplied by the Germans.





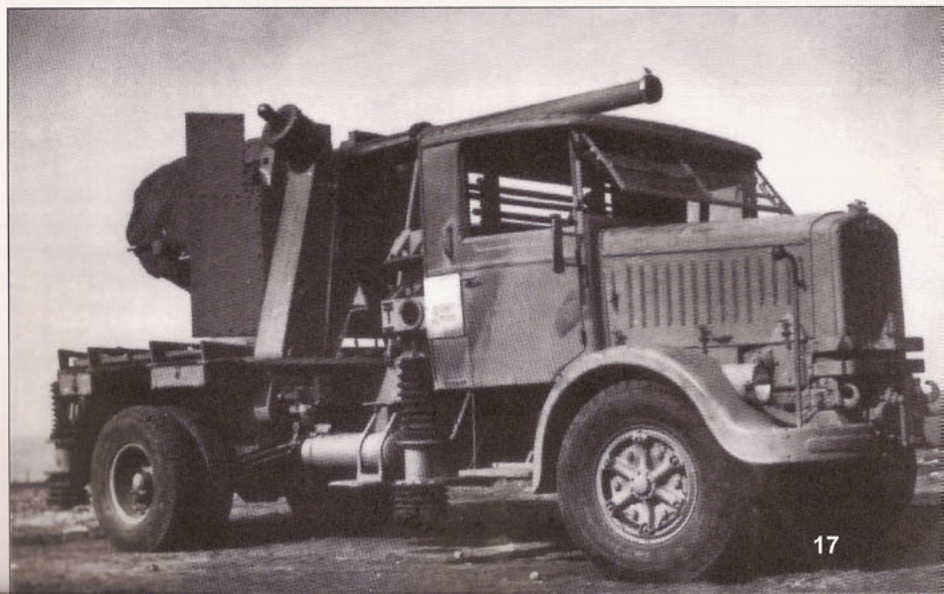
Each of these Lancia 3 Ro trucks is provided with four metal lockers, holding with a total of 210 rounds, including AP, HE, and anti-aircraft rounds. In addition to the fire prediction trailers, each battery also had four ammunition trucks built on the Lancia 3 Ro chassis.



An early version of the autocannone appears in this June 1941 photo. The gun, on the standard pedestal mount, was fixed to the chassis frame and stabilized by jacks in the firing position. The sides could be dropped to provide a platform for the gun crew. The shield was a later addition, the top of which could be folded to provide the requisite clearance for shipping by rail.

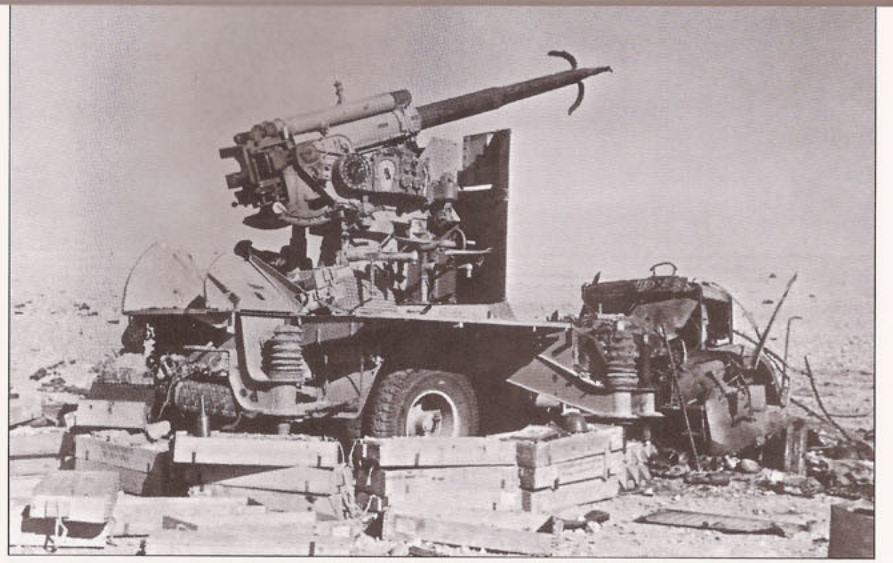
Autocannoni on the Lancia 3 Ro chassis see action during the second Axis counteroffensive in the desert in the spring of 1942. The guns appear to be firing as artillery in an indirect mode in support of the attacking Axis forces.

This later version of the autocannone da 90/53 on the 3 Ro chassis is in travel order. The top plates of the gun shield have been lowered to reduce height.



A 90/53 is being readied for firing. The gun is still partly shrouded and the stabilizer jacks are not fully lowered. Several crew members still have their carbines slung.

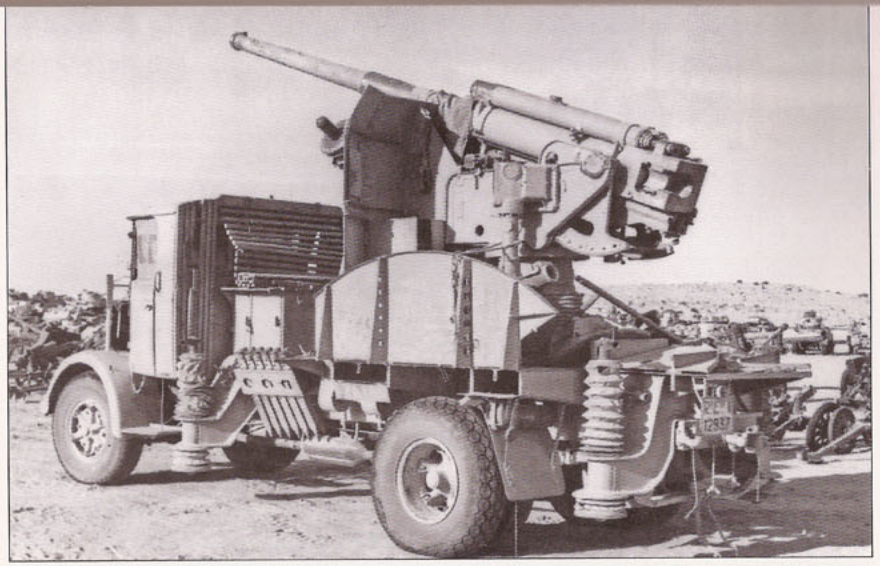
An autocannone and its ammunition carrier truck meet their end; set ablaze by an Allied attack in Tunisia. The gun platform sections and the jacks lowered to stabilize the vehicle in the firing position can be seen on the burned-out gun truck. Flames have destroyed the wooden body side panels on the ammunition truck in front of the gun truck, revealing the metal storage containers for the rounds. (Tank Museum Bovington)



This autocannone da 90/53 on the Lancia 3 Ro chassis was destroyed by its own crew after they ran out of ammunition. The ground sight is still in position on the gun's recuperator mechanism, indicating possible engagement of armored targets. Damage to both the engine and driving compartments is catastrophic. The blackened gun barrel with its shattered muzzle seem to be consistent with having been spiked to render the 90mm gun inoperable as well. The boxes in the foreground are empty two-round wooden ammunition crates, attesting to a significant number of rounds having been fired prior to being destroyed and abandoned. (Tank Museum Bovington)

Lancia 3 Ro NM, 1939-1948

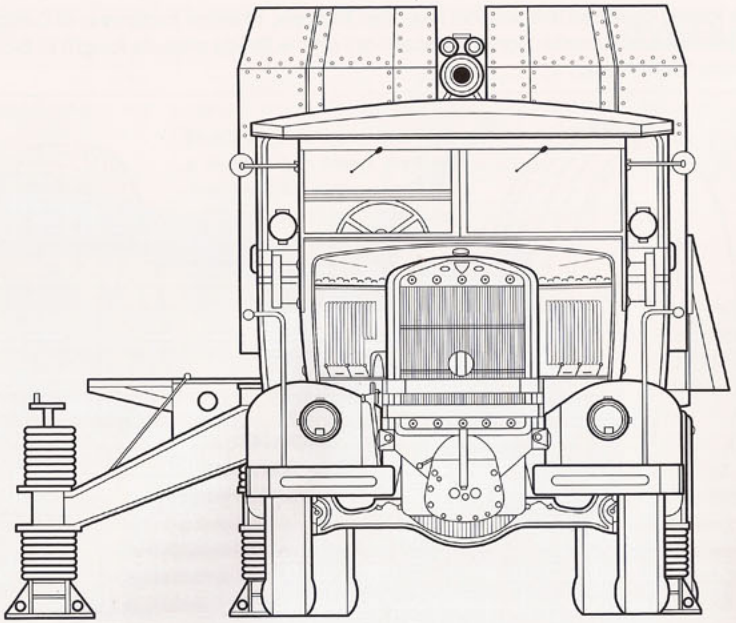
Manufacturer:	Lancia
Weight:	5,610 kg (12,368 lbs) empty
Engine:	Lancia 5 cylinder in-line Diesel, 6,875cc
Horsepower:	93 at 1,860 rpm
Fuel capacity:	135 liters (36 gallons)
Maximum speed:	45 km/h (28 mph)
Maximum range:	450 km (280 miles)
Length:	7,250mm (27'9")
Width:	2,350mm (7'8")
Height:	2,980mm (9'10") with canvas body cover 3,050mm (10') with 90mm gun
Wheelbase:	4,300mm (14'1")
Front track:	1,850mm (6'1")
Rear track:	1,774mm (5'10")
Tires:	"Ultraflex" sand tires, 270-20
Ground clearance:	280mm (0'11")
Fording:	700mm (2'3")



This 90/53 on a Lancia cassis is fitted with Pirelli Sigillo Verde Superflex tires in February 1943. It is part of the Italian equipment captured during the British Eighth Army's advance. (Australian War Memorial)

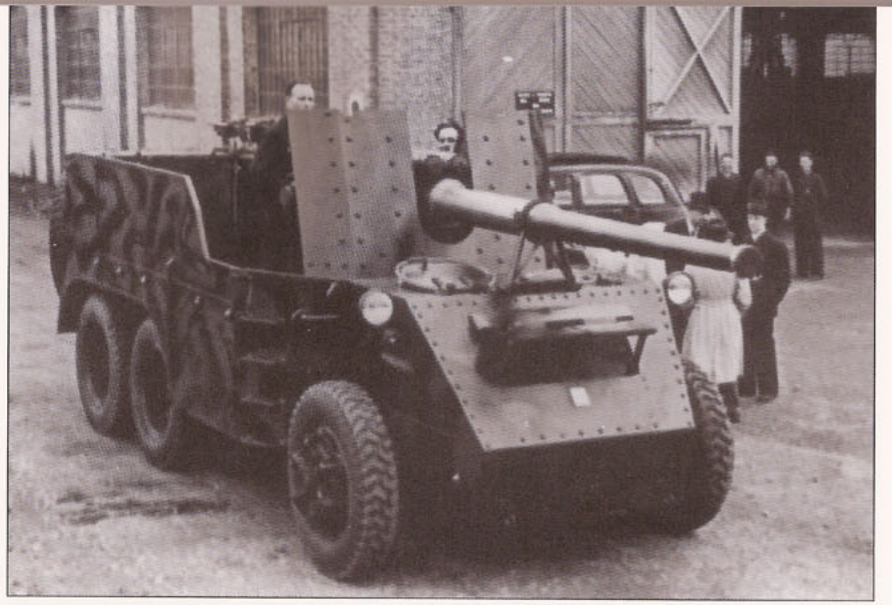
Allied personnel check out an autocannone from the Centauro Armored Division in Algiers, Algeria, before shipping it off to the Aberdeen Proving Ground on 28 May 1943. This vehicle is today at the Air Defense School in Fort Bliss, Texas. (U.S. Army)

A Lancia 3 Ro with 90/53 gun appears with the right-hand outrigger lowered and firing platform extended.

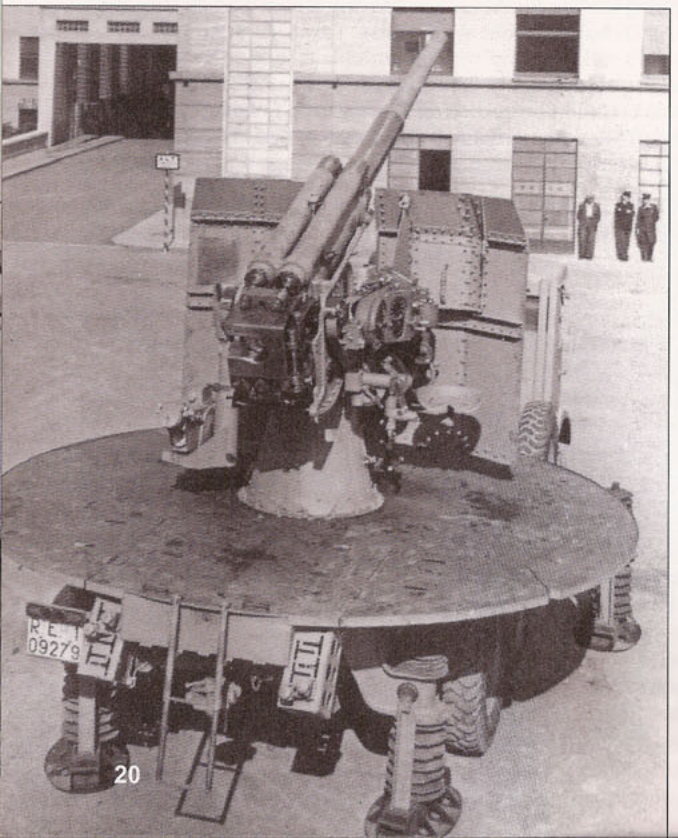


As an alternative to the Lancia prototype, another chassis for the 90/53 autocannone, the Breda 51 6x4 colonial truck, also appeared on 12 March 1941. Production vehicles were fabricated using a strengthened heavy field chassis, designated the Breda 52.

The first version of the Breda 52, not yet fitted with its gun and ammunition chest, has a canvas cover for its cab. This type of cab was not accepted, however, and series-production autocannoni had the standard hard cab of wartime Breda trucks.



The only prototype of the autocannone on the Breda Type 102 6x6 semi-armored chassis undergoes tests in summer 1943. It has a box armored hull, a lower height of gun axis, and a low gun shield. It could carry 30 rounds of ammunition on board. Secondary armament consists of two 8mm Breda Model 38 tank machine guns.

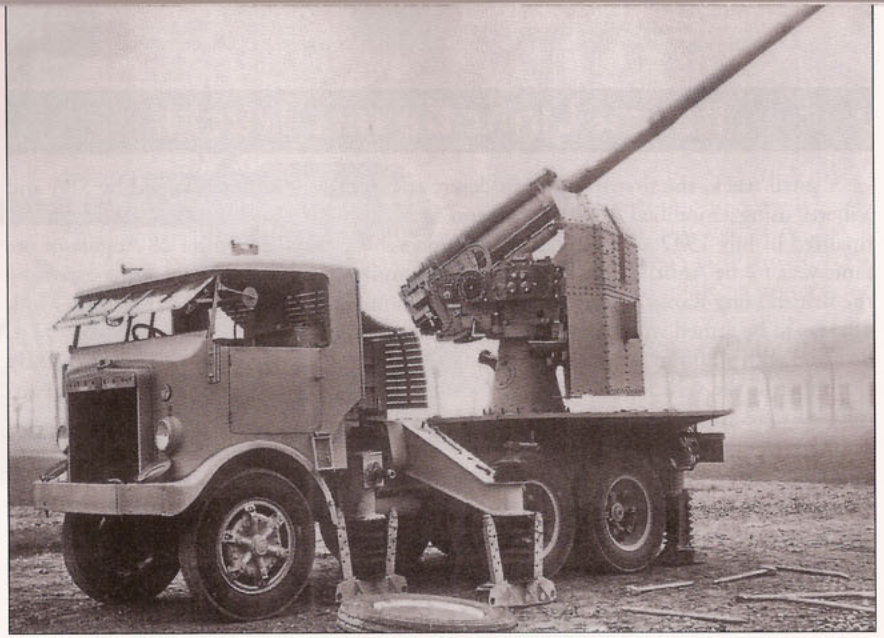


Seen here from above and behind, this autocannone, mounted on a Breda Chassis, has been fitted with Artiglio tires. Its firing platform has been extended, a small access ladder has been fitted, its shield is fully raised, and the jacks are in firing position.

British forces captured this vehicle near San Michele, 10 miles northwest of Caltagirone, in the province of Catania. Some autocannoni on the Breda chassis fought in Sicily with the Italian Sixth Army.

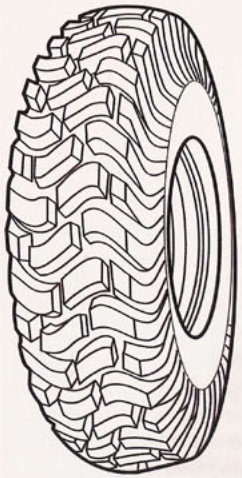
Breda 52, 6x4, 1943-1945

Manufacturer:	Breda
Weight:	8,500 kg (18,739 lbs)
Engine:	6 cylinder Diesel, 8,850cc
Horsepower:	115 at 1,800 rpm
Fuel capacity:	180 liters (47.5 gallons)
Maximum speed:	50 km/h (31 mph)
Maximum range:	500 km (310 miles)
Length:	6,720mm (22')
Width:	2,500mm (8'2")
Height:	2,659-3,300mm (8'9"-10'10")
Wheelbase:	3,400mm (11'2")
Front track:	1,800mm (5'11")
Rear track:	1,880mm (6'2")
Tires:	Artiglio or Libia 9.75-24
Ground clearance:	400mm (1'4")
Fording:	1,000mm (3'3")

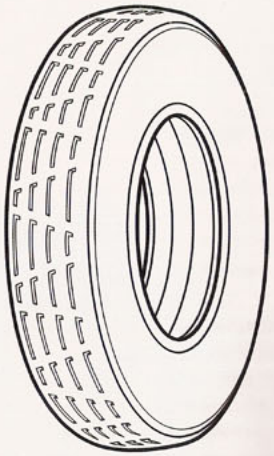


The 90/53 gun is mounted on a Breda 52 in battery. When the Tipo Libia desert tires were mounted, the free-wheeling spare tires that acted to prevent bellying were also removed. The Libia tires were in fact larger than the Artiglio tires.

Italian truck tires

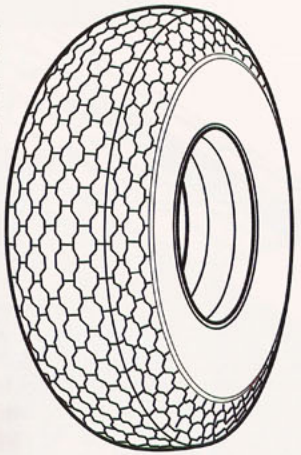


The Pirelli Artiglio tire had a heavy lug tread pattern designed for use on tactical military vehicles. It was roughly comparable to the U.S. non-directional tread (NDT) military tires.



The Pirelli tipo Libia tire was designed specifically for desert operations and was fitted on Italian light, medium, and heavy trucks as well as on armored cars in the desert.

The Pirelli Superflex tire was also designed for desert operations. Its wide profile afforded significant flotation in loose sand.



Italian Light Desert Trucks

A small truck, the first true Italian desert vehicle, was jointly developed by SPA and Viberti, using a modified AB 40 4x4 armored car chassis as a starting point. Its design was finalized in July 1942 and the first production vehicles were issued on 28 August of the same year to the Arditi Regiment, an Italian commando unit inspired to some extent by the British Long Range Desert Group. This camionetta, designated the camionetta Mod. 42, was to be armed with 8mm Breda machine guns; in addition, some vehicles were to be fitted with a 20mm Solothurn anti-tank rifle on an AT / AA mounting. Subsequently a number of the vehicles were sent to North Africa for extensive tests, and some of the vehicles were armed with 20mm Breda Model 35 guns and 47mm AT guns with good results. As a result, several camionette Mod. 42 of the second batch produced in 1943 and modified for the European theater mounted both these weapons.

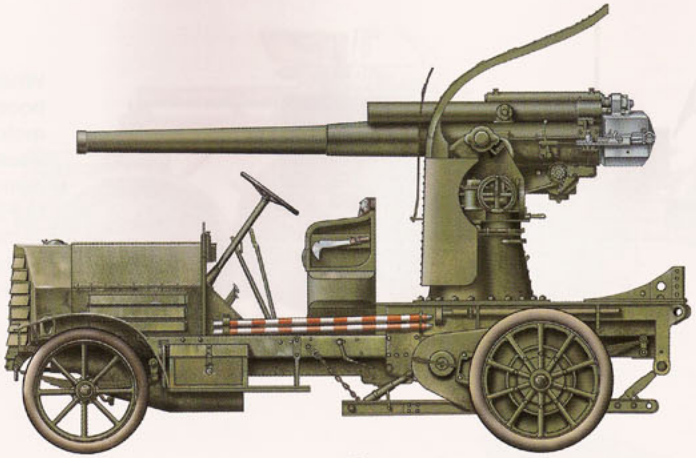
During the same period, the Saharan units had improvised an even smaller and less expensive type of desert vehicle by modifying the AS 37 4x4 Saharan truck, eliminating the roof of the cab and fitting it with a support that could mount either a 20mm Breda cannon or a 47/32 anti-tank gun. A purpose-built model of this development was approved, giving birth to the so-called camionetta 43, or AS 43. The few AS 43 produced and issued before September 1943 were confiscated by the Germans, who converted them into Luftwaffe AA vehicles, armed either with their 2cm Flak 38 or the Italian 20mm Isotta Fraschini- Scotti cannons.

The Saharan headquarters workshop extensively modified some A.S. 37s to produce armed camionette by September 1942. They could be fitted interchangeably with either a 20mm cannon or a 47mm anti-tank gun. Racks for ammunition and extra fuel cans were provided on both sides of the truck between the wheels. An 8mm machine gun on a special support could be operated by the vehicle commander.

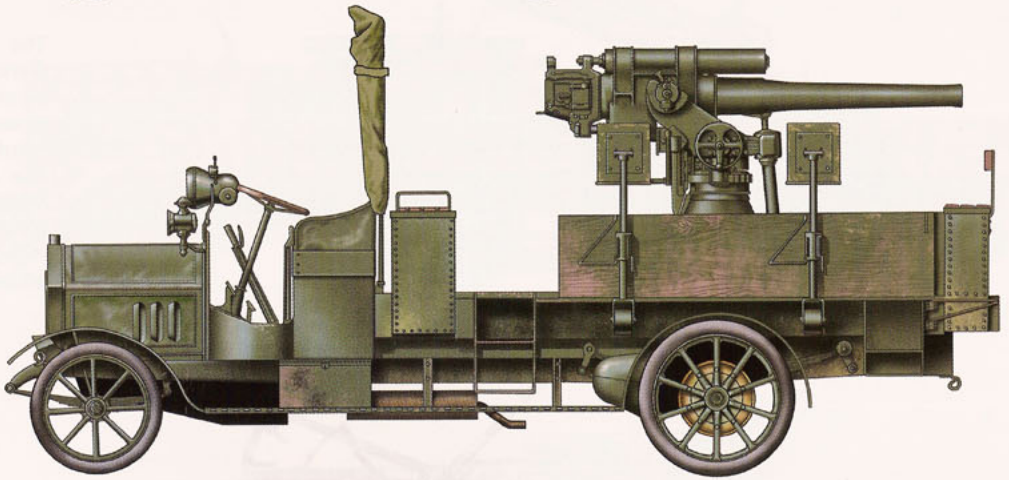
The Fiat A.S. 37 light desert truck was based on a light tractor design and was used extensively as a support vehicle in North Africa. Its large tires were designed especially for desert operations. (Fiat)

The vehicle with the 47/32 anti-tank gun was combat proven in late 1942 alongside the early camionetta 42. The modified A.S. 37 had a very low silhouette, a desirable feature for a vehicle that had to fight in the environment of the Sahara Desert.

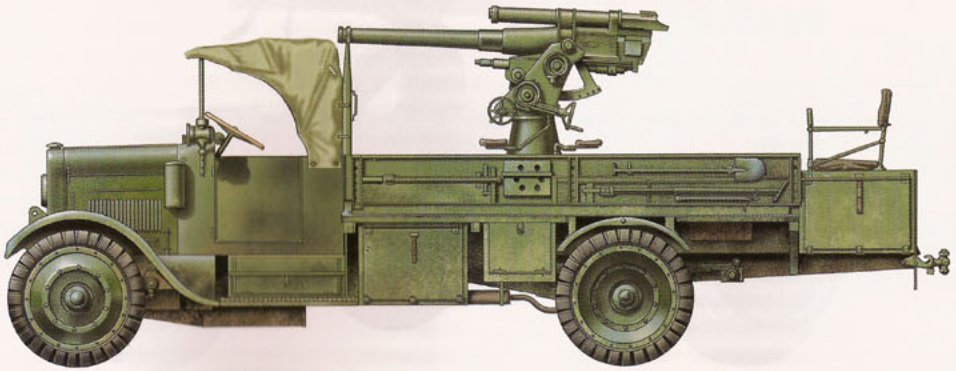
The 102mm autocannone da 102/35 on a SPA chassis was employed from 1915 to 1918 on the Italian Front. Initially painted gray-green overall, it later received the unit emblem in white on the armored hood and the number plate fixed to the nearside chassis. The number plate consisted of the abbreviation Szio Mre (for Servizio Militare, Military Service) in red, followed by a registration number in black.

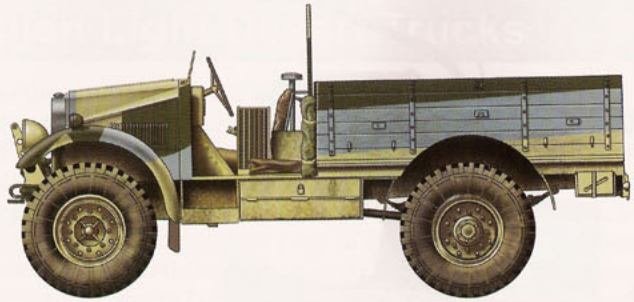


During World War I, the Italian Navy painted its autocannone da 76/30 on the Fiat 18 BLR chassis the same gray-green color as the Army's autocannoni. No unit emblem was painted on the vehicle. A large white individual number (e.g. "5") was painted on the sides and rear of the vehicle. The number plate consisted of the letters R.M. in red, followed by the registration number in black on white.

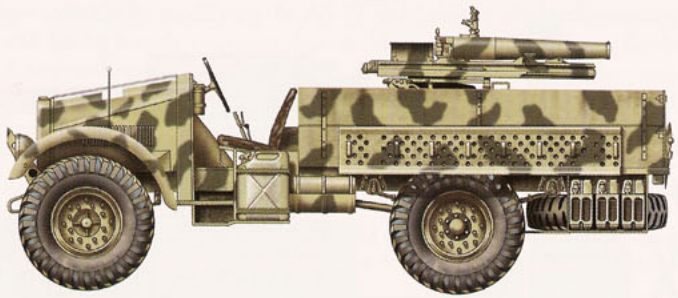


The Ceirano 50 C.M.A. for the 75/27 C.K. batteries were at first painted gray-green overall, with the standard numbering followed by a red C (cannone = gun) painted on the lower end of the radiator, and at the rear of the truck, on a metal license plate. Subsequently, the 75/27 systems operating in the desert were repainted sand overall. Some of the Ceiranos that had been captured by the British were recovered by the Germans who marked them with the Balkenkreuz and repainted them with gray-green patches on a yellow sand base.

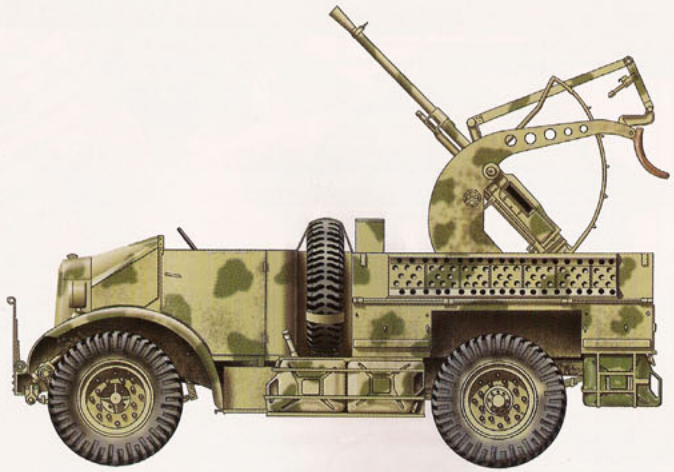




When the Italians conquered British Somaliland in 1940, their war booty included Boys antitank rifles, Bren gun carriers, and various motor vehicles, including some Morris CS8 light trucks. The latter were quickly assigned to units, still retaining their Caunter Middle East camouflage pattern used in 1940-1941 (BSC No. 34 Slate Grey, close to FS 14096, as an alternative to a sort of Khaki Green, and BSC No. 28 Silver Grey, close to FS 36473, over a base of BSC No. 64 Portland Stone, close to FS 33448). This profile shows a Morris CS8 employed by the Italian Air Force in Hargheisa.

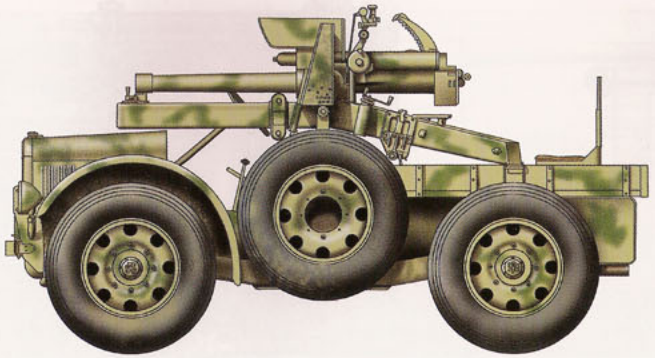


The original British livery of captured Morris camionette used as platforms for the autocannone da 65/17 was replaced with an Italian sand color base, over which gray-green patches were sprayed. The pattern was totally random, and color variations due to the available paint as well as to weathering were the norm rather than the exception. The batterie volanti (flying battery) emblem, on the nearside front mudguard, was a white triangle with a black silhouette of a gazelle. A white cross was sometimes applied to the vehicle's hood as an air recognition marking. A standard Italian military license plate was later added on the left rear of the vehicle.

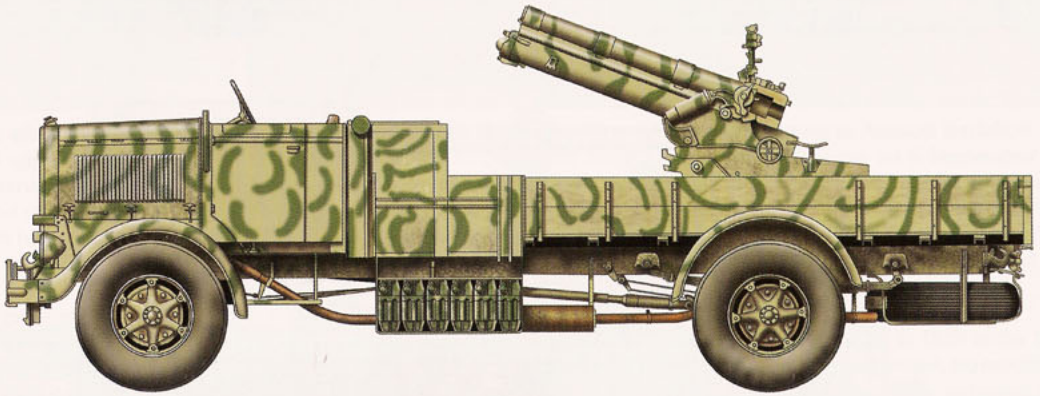


The CMP Ford F15s and Chevrolet C15s armed with the 20mm Breda AA cannon almost invariably were painted in a scheme that mimicked that used on the Morris CS8s. Placement, size, design, and color of unit markings also were consistent with those on the Morris camionette. Most camouflage schemes used on Italian vehicles in the desert employed color combinations and patterns similar to those used by Regia Aeronautica (Italian Royal Air Force) aircraft.

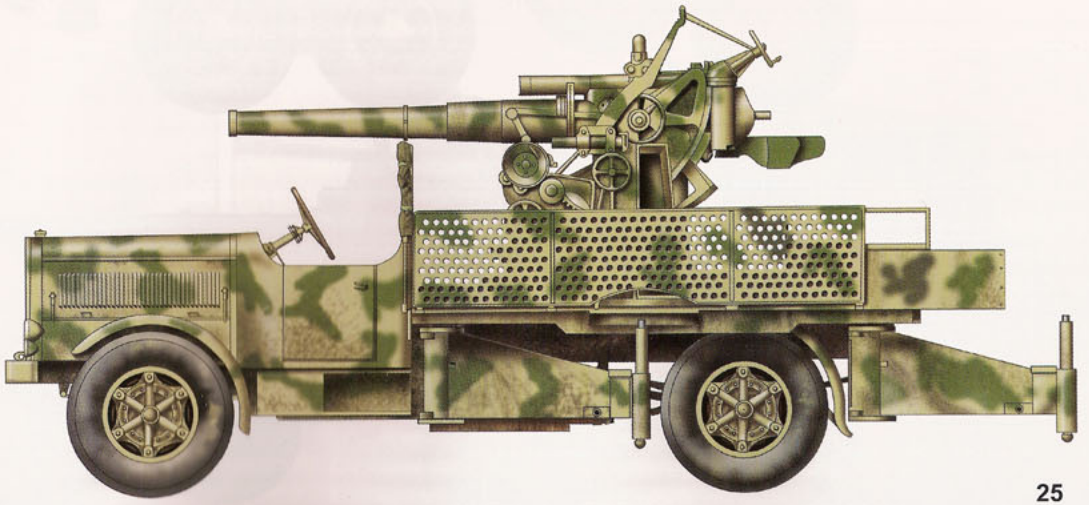
The green-over-sand paint scheme was applied to the autocannone da 75/27 Model 911 on the SPA TL 37 prime mover used as the platform for the 75/27 field gun. The TL 37 profile presented very few vertical surfaces, and the large tractor wheels accounted for much of the side profile of the vehicle. As a consequence, even though the green patches were applied over the sand color on the body, they were relatively innocuous.

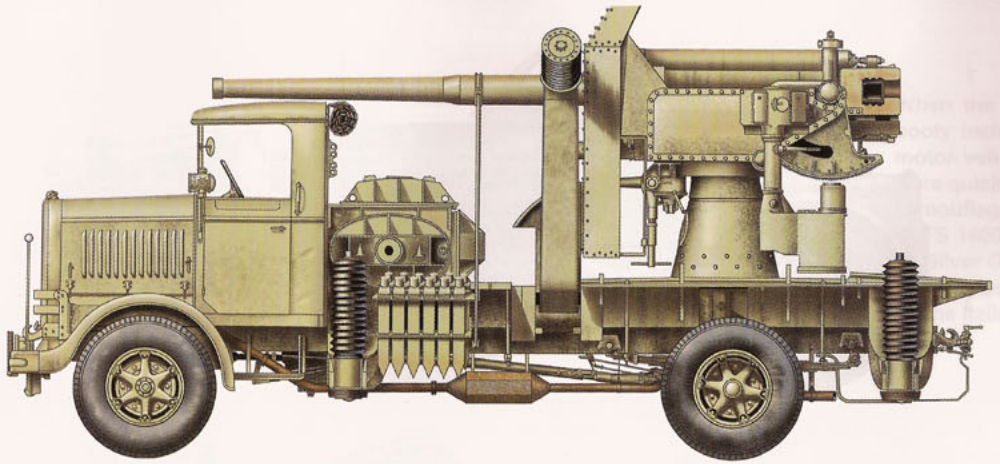


The camouflage scheme on the autocannone da 100/17 on the modified Lancia 3 Ro heavy truck chassis departed considerably from the majority of the other autocannoni and camionette in the desert. Although some of the autocannoni da 100/17 followed the normal green patches over the sand base, many carried a scheme that consisted of vertical green stripes over the ever-present sand base, applied to the engine covering, cab, body and gun itself.

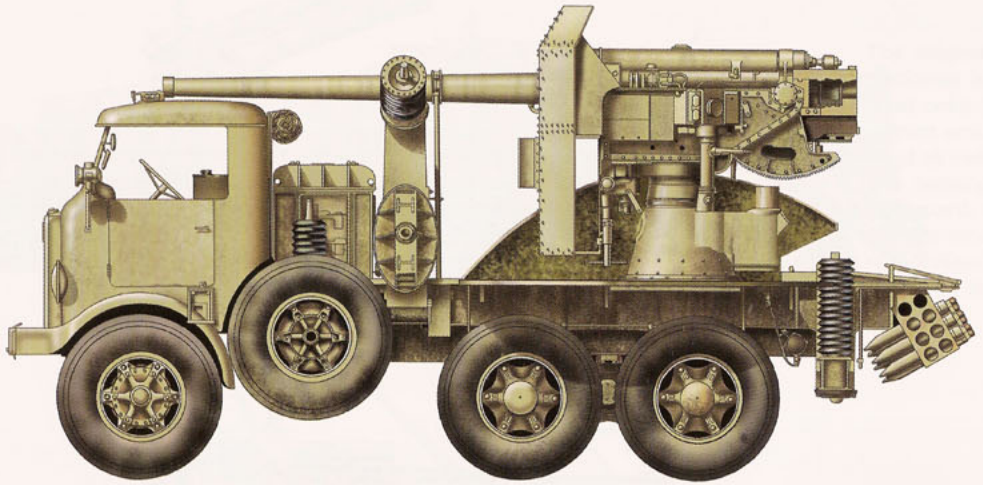


The Italian Navy's dual-purpose autocannone da 102/35 on the Fiat 634N chassis adopted the color scheme applied to Army autocannoni in the desert. Although the Navy's guns and truck platforms differed considerably from those used by the Army, in terms of color schemes there was little to distinguish the Navy's truck-mounted guns in North Africa from those of the Army.

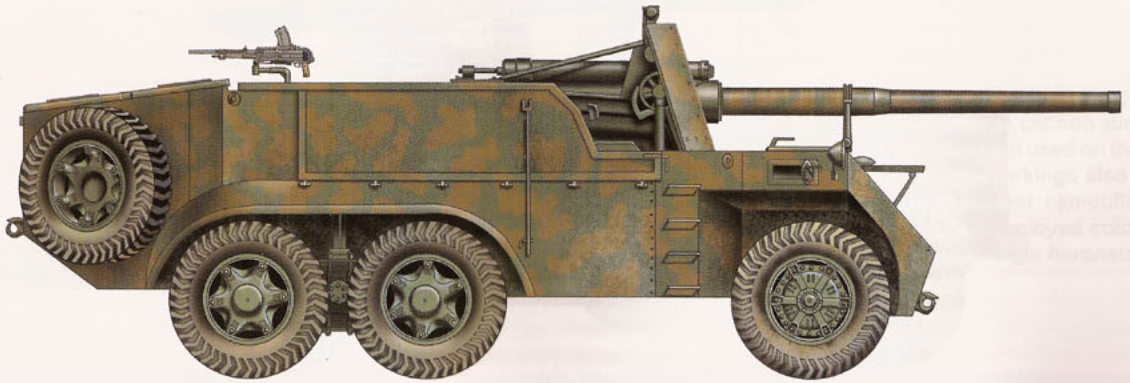




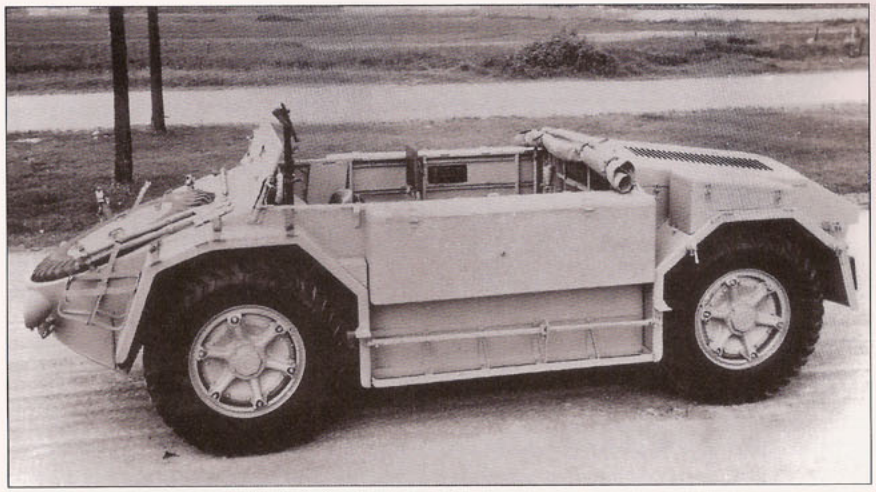
The purpose-built autocannone da 90/53 (a dual purpose gun mounted on the Lancia 3 Ro modified chassis) were painted in the standard Italian kaki sahariano (yellow sand). The yellow sand color was widely used on all classes of Italian vehicle in the desert, from administrative vehicles to tanks. Sometimes stenciled on the cab half-doors was a unit marking, such as the stylized Centaur of the 131st Centauro Armored Division.



The autocannone da 90/53 on the Breda 52 chassis was painted in the prevalent monochrome yellow sand color. The Breda autocannone with registration number RE 109354 from the DV Group was captured by the British in Sicily, near San Michele, 16km (10 miles) northwest of Caltagirone, in the province of Catania; no unit markings were found on the vehicle.



An experimental autocannone da 90/53 with a lower gun axis on a new type of Breda 6x6 chassis (the Autocannone Breda 102) received a provisional camouflage scheme consisting of a gray-green base with patches that may have been red-brown in color. Although this color combination had been used on Italian armored vehicles, it was a considerable departure from the color combination used on the autocannoni in the desert.



When all of North Africa was lost by the Axis in 1943, the vehicles still in production were slightly modified, with two long ammunition boxes replacing the upper row of jerrycans. In this vehicle, designated the Camionetta II, or the metropolitana (metropolitan), the desert tires were replaced by heavy-duty Pirelli Artiglio mud and snow tires (artiglio is the Italian word for "claw"). The vehicle had a canvas top, shown here rolled behind the troop compartment, but it was almost never used.

One of the Camionetta II with the 47mm AT gun, belonging to Assault Battalion "A," the General Staff's élite force, which fought against the Germans on 9 September 1943 in an attempt to prevent the German occupation of Rome. In the background are AB 41 armored cars. All of the vehicles are in the Italian camouflage scheme that used random stripes over the base color. Despite stubborn opposition by some Italian units at several points leading into Rome, the Germans quickly overcame the resistance and put the captured vehicles to their own use.

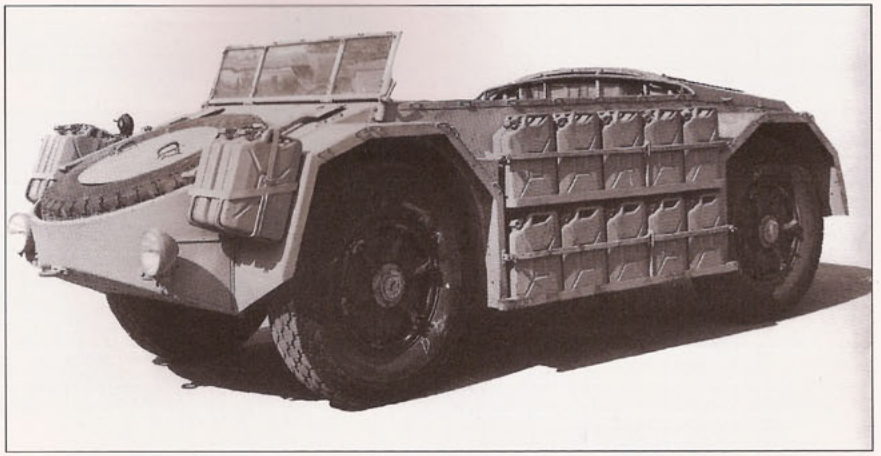
As happened with most of the more modern Italian equipment, most of the Camionette II fell into German hands. Here a vehicle with a 20mm Breda Model 35 cannon has a German crew. The weapon mounts the simple L.P. sight which by then had replaced the original standard sight that was complicated and expensive. The vehicle still retains its original desert tires.

The A.S. 37, a 4x4 light truck developed by FIAT-SPA and issued in 1939 to the Saharan units, was often fitted with a 20mm Breda Model 35 dual purpose cannon. No modifications were required to this vehicle for mounting the gun, which was only removed from its tripod and fixed to the bottom of the cargo bed.

Camionetta Desertica Mod. 42, 1942

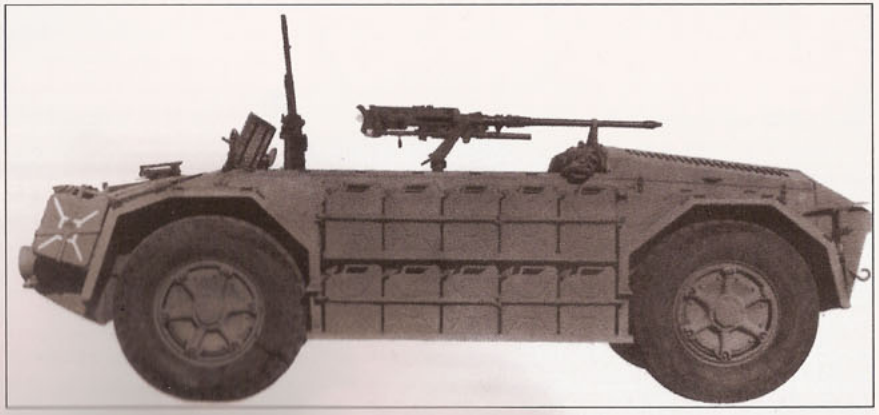
Manufacturer:	SPA-Viberti
Weight:	4,500 kg (9,921 lbs) empty weight
Engine:	SPA ABM 3, 6-cylinder gasoline
Horsepower:	100
Fuel capacity:	145 liters (38.25 gal) plus up to 400 liters (105.5 gal) in fuel canisters
Maximum speed:	84 km/h (52 mph)
Maximum range:	300 km (186 miles) plus 1200 km (745 miles) using on-board fuel canisters
Length:	5,620mm (18'5")
Width:	2,260mm (7'5")
Height:	1,800mm (5'11")
Wheelbase:	3,200mm (10'6")
Front track:	1,750mm (5'9")
Rear track:	1,750mm (5'9")
Tires:	9.75x24 (Pirelli Artiglio); 11.25x24 (Pirelli tipo Libia)
Ground clearance:	350mm (1'2")
Fording:	700mm (2'4")

A mixed column of light trucks returns from a patrol in North Africa in 1942. The two leading vehicles are Model 42 light desert trucks, followed by an A.S. 37 light truck. All are armed with the 20mm Breda Model 35 cannon



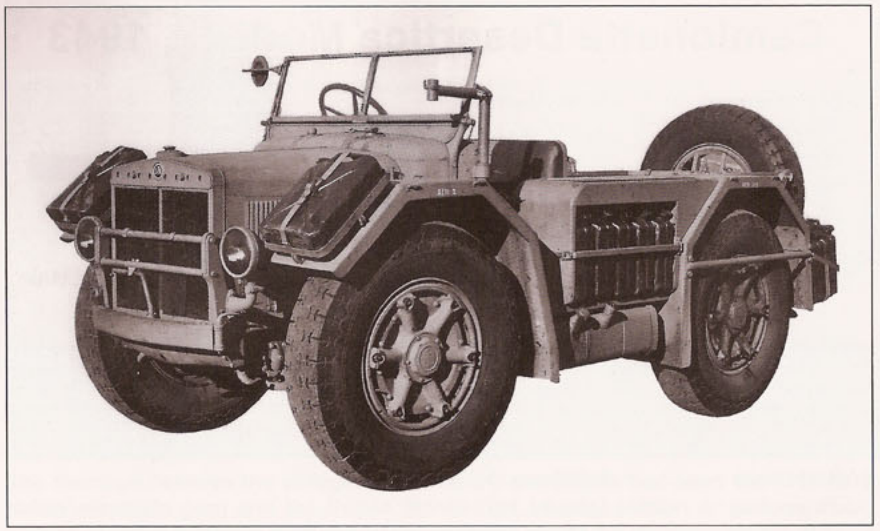
The prototype of the camionetta desertica 42 (Model 42 light desert truck) appeared in June 1942 and was soon standardized with few detail modifications. Its chassis is the same as that of the AB 40/41 armored car, but the all-wheel steering of the armored car was replaced by standard front-wheel-only steering.

The camionetta desertica 42 was a 4x4 "long" vehicle with a boat hull. The engine was at the rear, leaving space enough for the crew and various weapons fits. The space between the wheels on both sides was fitted with racks for two rows of jerrycans totaling 10 cans on each side. The additional fuel canisters allowed a maximum range of 1,500 kilometers (about 930 miles). Shown is the early version with a 20mm Solothurn semi-automatic anti-tank rifle and an 8mm Breda machine gun. Sand channels were carried over the rear wheels. The new armament tested by the Saharan units included the 20mm Breda dual purpose cannon and the 47/32 anti-tank gun, both with 360-degree traverse. Such armament was later mounted on the second batch of vehicles, referred to as the "metropolitan version" of the camionetta, that was produced the following year.



The Rome Experimental Motor Center modified the desert vehicle for the "A" Assault Battalion. The pioneer tools are moved to the sides. Racks for 10 fuel, oil, and water cans are on the front mudguards, on the sides, and on the rear.

The rear view of the "A" Assault Battalion vehicle illustrates the ease of conversion from the standard A.S. 37: the cab top and windshield were eliminated and auxiliary fuel tanks were replaced by several jerrycans.



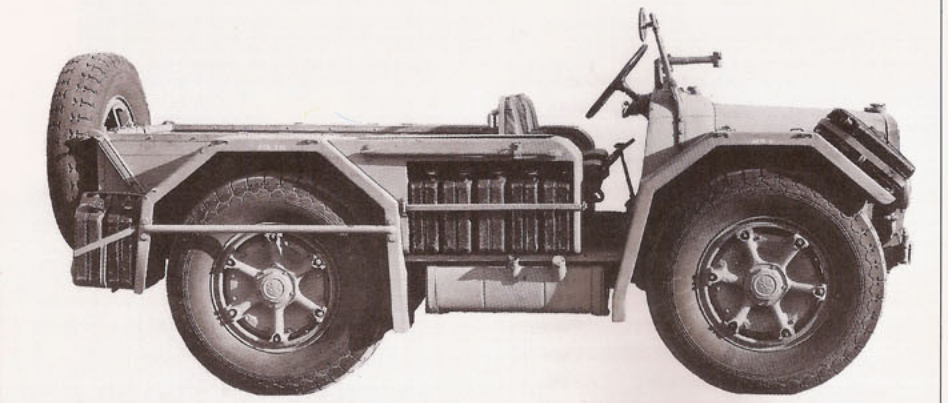
The industrial development of the new camionetta, designated the A.S. 43, resembles the Saharan conversion.

The production model of the A.S. 43, with Artiglio tires, was not ready until the North African campaign was already over. The truck is shown at the Viberti yards in summer 1943. The vehicle was without its weapons, which were mounted elsewhere. In contrast to the Camionetta II, these trucks were already camouflaged for the continental theater.

Camionetta Desertica Mod. 43, 1943

Manufacturer:	SPA-Viberti
Weight:	5,000 kg (11,023 lbs) combat loaded
Engine:	SPA 18 VT (Variant 4), gasoline, 4053cc
Horsepower:	73
Fuel capacity:	
Maximum speed:	68.5 km/h (43 mph)
Maximum range:	1,120 km (695 miles) w/six 20-liter jerrycans plus fuel tank; 750 km (466 miles) without additional fuel
Length:	4,820mm (15'10")
Width:	2,060mm (6'9")
Height:	2,175mm (7'7")
Wheelbase:	2,500mm (8'2")
Front track:	1,600mm (5'3")
Rear track:	1,600mm (5'3")
Tires:	Libia 11.25x24
Ground clearance:	345mm (1'2")
Fording:	700mm (2'4")

The SPA-Viberti A.S. 43 was developed for desert war in tandem with the Model 42 light desert truck. Armament was either a 20mm Breda Model 35 cannon or a 47/32 gun on an interchangeable mount, plus the commander's 8mm Breda Model 37 machine gun on an integral gooseneck support on the left front fender. Between the seats was an ammunition locker for the Breda Model 37 magazines. The steering wheel was on the right-hand side, as on most Italian military vehicles. A.S. 43 had independent suspension, hydraulic shock absorbers, an on-board compressor for tire inflation, hydraulic brakes, four-wheel drive, steerable front wheels only, and no doors. (Fiat)



The Camionetta 43 with one of its alternative weapons, the 47/32 Model 35 Breda gun. This AT weapon was effective against most Allied tanks deployed until 1941, but proved rather inadequate against later models. Elevation was from -10° to + 64°; muzzle velocity was 603 m/s (1979 fps), and maximum range was about 3,700 meters (about 4,000 yards). The same gun mount could be fitted alternatively with a 20mm Breda cannon with no modification, and had a 360° traverse. The only precaution required for full traverse was lowering the spare tire in the rear.

A column of camionette A.S. 43 assigned to a Luftwaffe unit. The vehicles belong to the type developed for the Italian Regio Esercito, but have been fitted with German 2cm Flak 38 cannons.

Field Expedients and Captured Vehicles

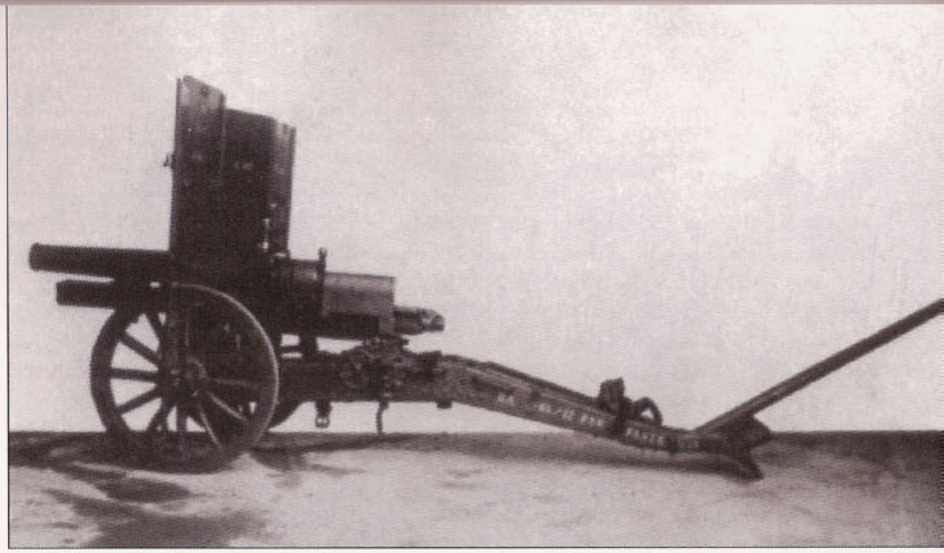
The Italians resorted to improvised or field expedient creations using both Italian and captured British vehicles to provide mobile artillery platforms. By late 1940, in response to specific requests by higher headquarters, artillery workshops in Libya had built 100 mounts for 20mm cannons and 150 mounts for 47mm guns suitable for installation in truck beds. Lancia 3 Ro trucks were fitted with 47mm guns on a traversing mount, and SPA 38R trucks were used as platforms for the Breda Model 35 20mm cannon. Jury-rigged mountings for 65/17 guns and 20mm Solothurn antitank rifles had also been realized by late 1940.

Beginning in the spring of 1941, the availability of captured British vehicles led to fitting at least 28 Morris-Commercial CS8 4x2 trucks with Italian 65/17 guns, and a like number of CMP (Canadian Military Pattern) Chevrolet C15 or Ford F15 4x2 trucks with 20mm cannons. At least one Ford F15 was also armed with Breda-SAFAT 12.7mm machine guns, and at least four mounted the 20mm Breda Model 39 cannon. On 8 August 1941, during a high-ranking meeting in Cyrenaica, General Gastone Gambara, commander of the Corpo d'Armata di Manovra (CAM; Mobile Army Corps) in North Africa disclosed "he had fitting out a squadron of 24 captured all-terrain camionette, on each of which a 65/17 gun was being mounted for use in the anti-tank role, as well as for other purposes as the case might warrant." By September 1941 this eclectic mix of vehicles had proven itself well enough so that a provisional table of organization and equipment, calling for the use of 71 captured vehicles, was adopted for the motorized groups thus equipped.

Ultimately, some 16 improvised batteries were equipped with 65mm or larger guns, accounting for more mobile artillery in North Africa than did the series-built 90/53 systems, providing a testament to the ingenuity and adaptability of the field deployed Italian units and their supporting field depots.

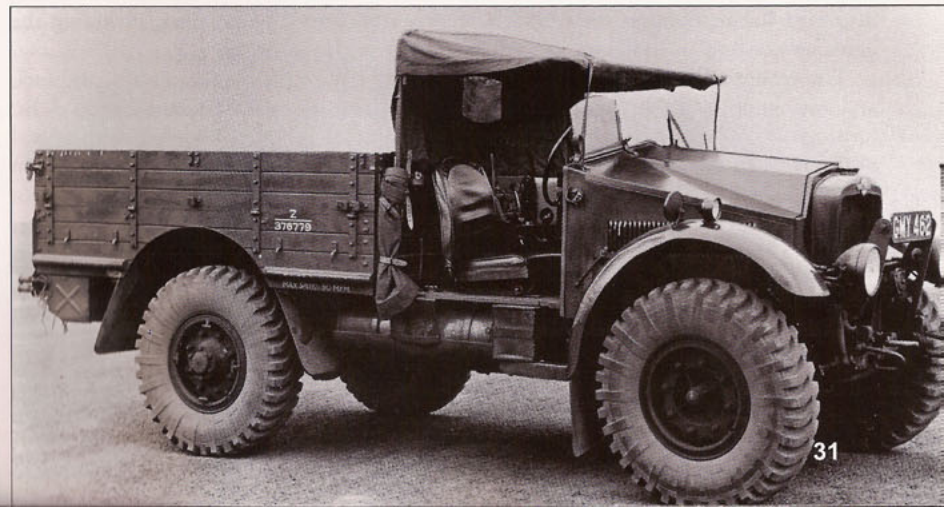
Lack of spare parts for the captured vehicles caused unusual maintenance problems. The Italians frequently resorted to scavenging needed parts from British vehicles that they captured intact. The batterie volanti ("flying battery") crews, not surprisingly, also availed themselves of captured fuel and rations whenever they were available.

The first two self-propelled guns were ready by 8 September of that year and a complete battery on 22nd of the same month. Each battery generally had four 15 CWT Morris CS8 camionette armed with the Italian 65/17 gun, each with 36 rounds, and two ammunition-carrier camionette, each with an additional 250 rounds (half AT and half HE). Some batteries were organized with three Morris gun trucks and two Ford F15s with 20mm Breda cannons. The original cargo bodies on the Morris trucks were modified by lengthening and by adding four topside panels that were hinged to allow the gun to traverse and recoil while firing to the side of the vehicle. A 20mm AA battery was also outfitted on captured British vehicles, with 13,248 AA cartridges and a total of 4,416 AT cartridges. They were built by mounting the Breda cannon on CMP Ford 15 CWT vehicles or on Morris CS8s. Moreover, two Morris camionette were fitted with a Breda-SAFAT 12.7mm MG (4,800 cartridges altogether). Each vehicle carried eight 20-liter



The marriage between the vintage 65/17 infantry gun (which had been the 1915-1918 Italian mountain gun) and the British Morris CS8 infantry section or platoon truck, several of which had been captured by Italian forces during the reconquest of Cyrenaica in spring 1941, was an innovative idea to provide a stop-gap substitute for the early self-propelled gun units that were still in training during that period. The gun, issued to infantry regiments, used AP ammunition and had proven to be the best antitank gun of the Nationalist forces during the Spanish Civil War.

The Morris CS8 (the S denoted a six cylinder engine, and the 8 indicated the approximate wheelbase in feet) could move easily in the desert even though, as a 4x2, it experienced some mobility problems in soft sand, which required it to carry sand channels. This 15 CWT light truck was the backbone of the British Army in 1939 and was highly appreciated for its high ground clearance. A large military air filter was located between the seats in early models. (Tank Museum Bovington)



jerrycans (six for gasoline, one for lubricating oil, one for water).

In early 1941, the Regia Marina turned over two 102/35 guns taken from defense installations in Ṭubruq ("Tobruk") to the Fiat workshops in Tripoli, to be mounted on Fiat 634 N trucks. These 102mm guns were an improved version of the guns mounted on the World War I 102/35 autocannoni. These two guns, along with a third gun added in August 1941, constituted the 1st Mobile Battery. A similar battery, designated the 6th, was formed later with four 102/35 systems. These batteries belonged to the X MILMART Legion, which in turn on 20 October 1941 was operationally subordinated to the Corpo d'Armata di Manovra (CAM, or Mobile Army Corps) operating in Marmarica. Notwithstanding their shortcomings such as broken elevating gear teeth and other elevation mechanism problems due to warping of the truck frame after prolonged firing, and their brief period of operational service, the 102/35 autocannoni were a nasty surprise for the British when they first appeared.

On 26 October 1941 the 1st Battery was assigned operationally to the Ariete Armored Division and initially was employed in the antiaircraft role. On 19 November, during the battle of Bi'r al-Ghabî ("Bir el Gobi"), along with Section B of the 6th Battery it took on an antitank role, reportedly accounting for the destruction of 15 enemy tanks. Between 21 November and 2 December a series of actions resulted in gradual, but complete, destruction of both batteries.

The final battery of this raggruppamento (battlegroup) consisted of four autocannoni with 100/17 Škoda howitzers mounted on Lancia 3 Ro trucks whose cabs had been cut down to allow 360° fire. A large number of Škodas had been obtained as war reparations from Austria following World War I and had been integrated into the Italian artillery inventory; in June 1940 there were 175 in the inventory. Each truck carried 100 rounds of ammunition. The first firing test of this self propelled gun was made on 29 September 1941. A first battery was ready by fall 1941, proving quite effective in its first encounter with British tanks, but was soon lost in operations within a week when a German Stuka attack – a "friendly fire" incident - destroyed the whole battery as well as half of a battery equipped with Morris CS8s armed with the 65/17 guns, despite the fact that the vehicles displayed Italian flags on their fenders. Seven artillerymen were killed, including the lieutenant colonel in command of the battlegroup.

The group itself also had logistic units for reserve provisions, ammunition, and fuel, and was equipped with captured Morris 30 CWT trucks and standard Lancia 3 Ro heavy trucks. The following year an entire three-battery group was formed with a total of 12 100mm autocannoni and replaced the first battery that had been destroyed in November 1941. These systems were fabricated by the 12th Autoraggruppamento (an expanded motorized group with organic workshops) and achieved excellent results. At first these batteries were officially referred to as batterie volanti ("flying batteries"), on 24 May 1942 all of these batteries, renamed "autocannoni batteries," formed the 136th Artillery Regiment of the Giovani Fascisti Division, which in the summer occupied Sîwah in Egypt and later fought in Tunisia.

The definitive organization, formalized in June 1942, redesignated the batteries as "light motorized batteries" and called for a headquarters element, three 65/17 batteries

In July 1941 the Comando Superiore Forze Africa Settentrionale (C.S.F.A.S. – North Africa Armed Forces High Headquarters) communicated to the General Staff in Rome that it had mounted a 65/17 gun on a British camionetta (light truck) capable of rapid movement in the desert, resulting in a very effective vehicle "suitable for fast movements for support and protection of our light tanks against British armored cars." Following very satisfactory results, as only five guns were on hand to equip about 30 available camionette, C.S.F.A.S required shipping an additional 25 guns complete with sights, but minus their shields. The prototype, at 'Ayn Mârrah near Darnah in northeastern Libya, is being inspected by the Chief of Artillery, Colonel Tullio Nicolardi.

The prototype at 'Ayn Mârrah near Darnah retained the original front bumper (a feature of the very early CS8s). The front bumper was frequently eliminated, however, when subsequent war booty vehicles of this type were converted to the gun vehicles. Windscreens and canvas doors were also frequently eliminated. The original side body panels have been removed and the gun is oriented forward; later standard modifications included a lengthened body with side panels. Normal practice also was to orient the gun facing to the rear during travel, but facing to the sides when near the front line.

(totaling 12 65/17 gun trucks), a section of four truck-mounted 20mm guns, and some 40 support and administrative vehicles (including 13 motorcycles). Personnel strength of the batteries was 13 officers, 7 NCOs, 137 artillerymen, and 56 drivers. In October 1942 a final document used the incorrect designation of autoportate in a reference to the batteries.

Although development of these improvised autocannoni had begun in the spring of 1941, they had still not been delivered to the front when General Gambara and General Erwin Rommel of the Afrikakorps met near Ajdâbiyâ ("Agedabia"), Libya, on 27 January 1942. At the conference, Rommel highlighted the Italian CAM's need to commit more assets to the reconnaissance element, which had suffered heavy losses. Gambara informed Rommel that the Italians were awaiting the arrival of armored cars for this purpose, but that they had not yet been delivered. In the meantime, as a stop-gap measure, they were preparing "many batteries with 65, 75, and 100mm guns and special ammunition," to form a reconnaissance unit for the CAM. Rommel then added that captured British vehicles would fit the bill, but should be fitted with antitank guns and be employed in patrols of three vehicles. The exchange continued, with Gambara asking for 40 captured vehicles, to which Rommel replied that the Germans had rendered them all useless. The meeting apparently ended with Gambara stating that he was "sweating to scrape up a few vehicles," offering Rommel one Italian heavy truck for every two British light trucks the Germans could provide, and Rommel promising "not to forget."

The final type of autocannone to be built for this reconnaissance group was the 75/27, a French patent (Déport) field gun-howitzer, produced by Vickers-Terni as the Model 911, with modifications to its shield and trails, mounted on a SPA TL 37 Libia artillery tractor. This system was the crudest of all of the improvisations, both in terms of appearance and functionality, and the total number produced amounted to only 12 (three batteries). Traverse of the 75/27 gun was limited to 52°.

On 31 October 1942, while the Battle of al-'Alamayn ("El Alamein") was in progress, the Italian artillery command in Libya issued a document calling for a number of truck-mounted 65/17 batteries to be organized as soon as possible, with the guns able to fire either from the trucks or from the ground. To this end a request was made to fit a captured Ford truck and an Italian Fiat 626 truck with a rotating platform for the gun, but the unfavorable turn of events caused the program to be cancelled.

Although most improvised truck/gun combinations were produced and used in the North African theater, the Italians also produced and used various other autocannoni and antiaircraft systems in East Africa, the Balkans, and Italy itself. In Eritrea (Italian East Africa) an unspecified number of 65/17 guns were mounted on Fiat 634 trucks, and one battery of 76/30 guns was mounted on unspecified trucks. Also mounted on an unspecified type of truck were three twin-mounted 13.2mm Breda Model 31 heavy machine guns. In the Balkans, some 47/32 anti-tank guns were mounted on the Lancia 3 Ro chassis for anti-partisan operations. In Italy itself, in Milan in late 1944, at least two Scotti-CEMSA 20/70 antiaircraft guns on static mounts were mounted on Alfa Romeo T.430 trucks and were assigned to a special police unit of the Fascist Italian Socialist Republic engaged in anti-partisan operations

The ammunition box is placed to the rear of the gun in this arrangement of the cargo body with the gun mounting. Initially, 40 rounds were carried on board, but this quantity was later increased to 60 rounds.

The 65/17 autocannone appears in its definitive form. The range of the gun was 6,800 meters (7,400 yards). The Morris cargo body had been lengthened, with side panels that could be lowered. Racks for eight 20-liter jerrycans were added, and a machine gun operated by the vehicle commander was also fitted at times. Pioneer tools were repositioned on the rear of the body. Each gun vehicle was accompanied by another CS8 acting as an ammunition carrier, while other CS8s fitted with radio sets were located at battery and battalion headquarters.

The condition of this CS8 in yellow sand livery in Cyrenaica sometime in 1942 suggests that it may have been recently issued as a gun truck. The ubiquitous 6.5mm Model 91 cavalry carbine is located to the right of the driver. The bulldozer in the background is ready to assist vehicles in a column behind the camionetta.

The Chief of General Staff, Marshal Ugo Cavallero, delivers a speech from a camionetta with a 65/17 gun in Gioda Village (now al-Karârîm, near Miṣrâtah), Libya, in June 1942. To his right is Marshal Ettore Bastico, then Commander in Chief in North Africa, succeeding General Gastone Gambara.

A battery of 65/17 guns halts during its advance towards Sîwah, Egypt. The sand channels normally carried, as on the near vehicle, are absent on the lead vehicle.

The 1a Batteria Volante, 1° Gruppo, 136° Reggimento d'Artiglieria Celere (1st Flying Battery, 1st Group, 136th Mobile Artillery Regiment) of the Giovani Fascisti Division operates a Morris CS8. The picture was taken in Tunisia in 1943, as the white air identification cross is not present. No jerrycans were present, as engagements were fought over short distances in Tunisia and they were not necessary. The photographer likely was the fourth crew member. (LT Silvio Monte)

Modified Morris CS8 utility trucks serve as command and service vehicles. Italian camionetta groups also used war booty Chevrolet 30 CWT trucks as support vehicles.

The 65mm gun on a Morris CS8 is ready to fire. Elevation was from 0° to +20° only, but traverse was a full 360°. Four artillerymen made up the crew.

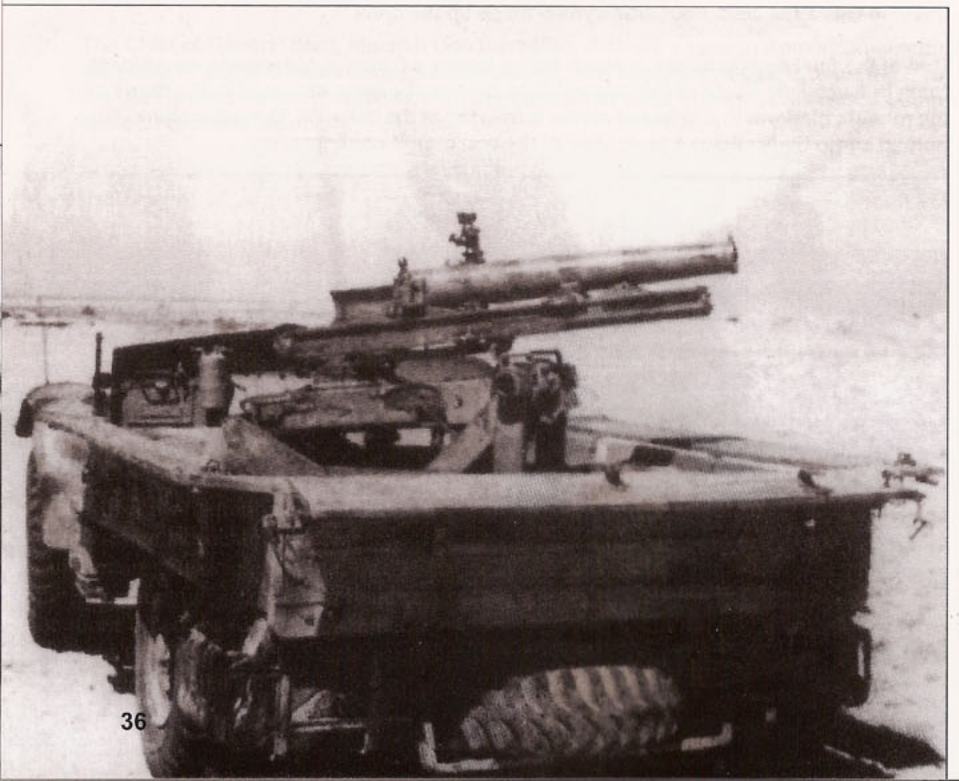
A gun and crew fill the cargo bed of a CS8. The vehicle next to the CS8 is a CMP (Canadian Military Pattern) Ford F15 with a 20mm Breda Model 39 antiaircraft cannon mounted on the cargo body. This type of Canadian built camionetta was well suited to carry this weapon along with an adequate ammunition reserve.

One of the final engagements in North Africa leaves a 65mm autocannone on a Morris truck in flames. The axle of the original field gun can be seen mounted in the frame of the rotating platform that is based on the turret ring of the Italian M.13 medium tank. The burned cargo body allows a clear view of the gun mount configuration.

The upper portion of the gun trail mounted on a frame fixed to the rotating platform is visible on the wrecked remains of another 65/17 autocannone in the Western Desert.

One of the Batterie Volanti autocannoni sports the unit marking on the right mudguard and a white Savoy Cross on the hood as an air recognition signal.

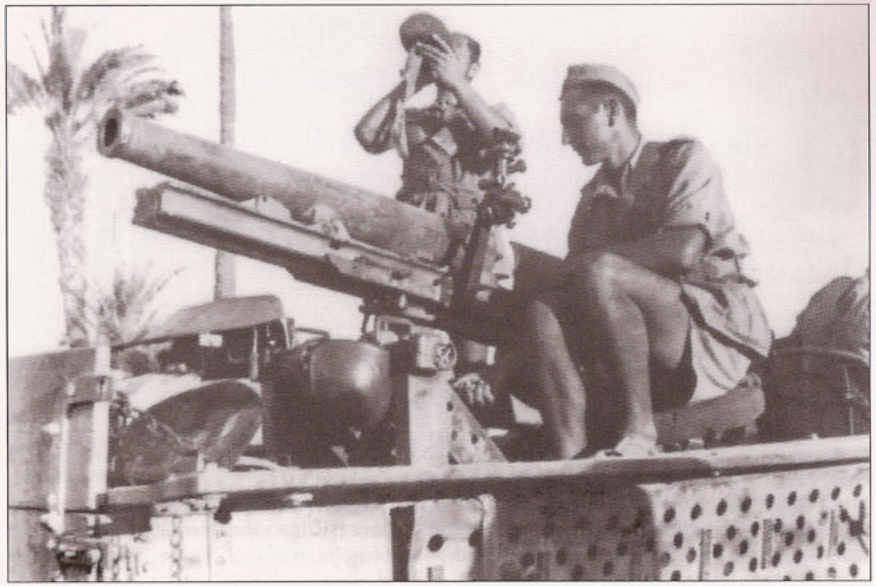
Side and rear panels are lowered to allow 360° traverse of the gun on this autocannone seen from behind. Enemy tanks could appear from any direction in the desert.



Morris-Commercial CS8

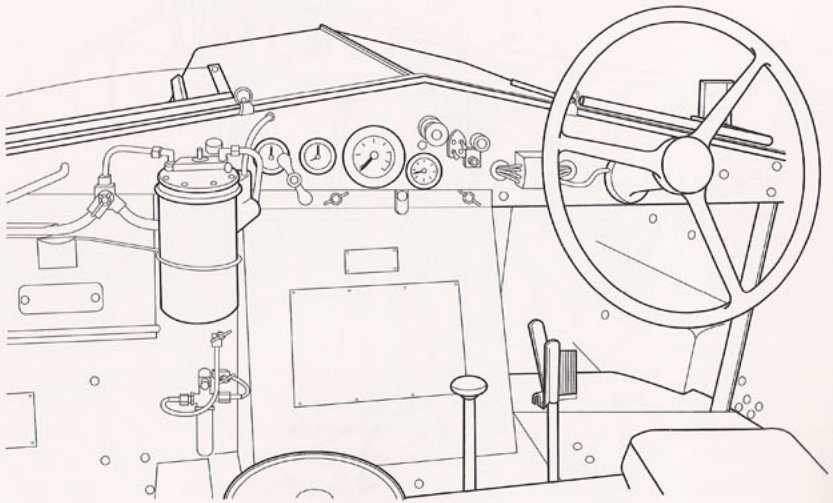
Manufacturer:	Morris
Weight:	1,969 kg (4,340 lbs)
Engine:	6 cylinder side-valve
Horsepower:	60
Fuel capacity:	100 liters (22 Imperial gallons; 26.4 US gallons)
Maximum speed:	65 km/h (40 mph)
Maximum range:	600 km (375 miles)
Length:	4,229mm (13'10")
Width:	1,981mm (6'6")
Height:	1,981mm (6'6")
Wheelbase:	2,489mm (8'2")
Front track:	1,600mm (5'3")
Rear track:	1,511mm (4'11.5")
Tire size:	9.00-16
Ground clearance:	241mm (9.5 inches)
Fording:	Not available

Note: These specifications refer to a CS8 in original British configuration. The Italians changed several features. The cargo bed was apparently extended behind the rear axle by about 18-20 inches (460-510mm). The 65mm mountain gun weighed about 1,220 lbs (560kg) and the lengthened cargo bed, ammunition, and full jerrycans probably added another 700 lbs (317kg) for a total weight of about 6,260 lbs (2,846kg) combat laden. Supplemental fuel containers, carrying an additional 120 liters (31.7 U.S. gallons), increased the range to as much as 825 miles (1,325km) under optimal conditions.



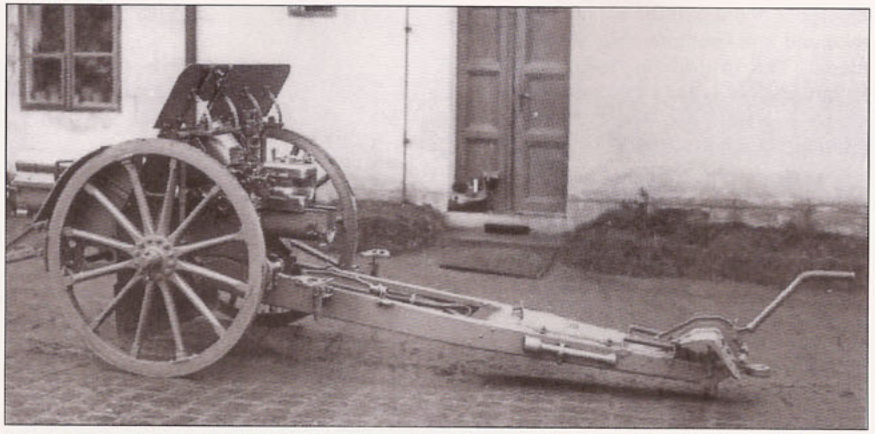
Life for these artillerymen on their camionette was not easy at all. There was no refuge from the sun and sand, and there was a constant risk that they could be mistaken as enemies by both their Italian comrades and their German allies. Moreover, the rear cargo body was a very cramped space for travel, living, and fighting.

The British Morris CS8 light truck driver's compartment is detailed.



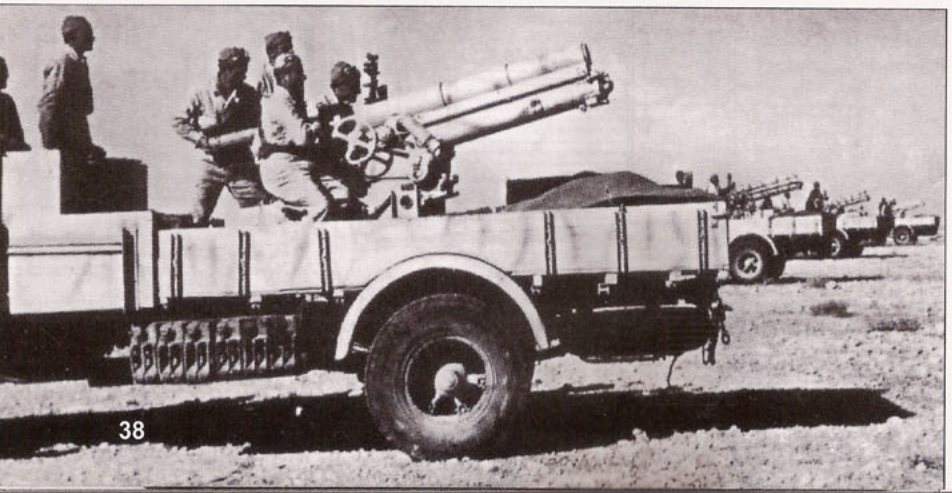
Members of the batterie volanti received this commemorative medal. The inscription, in an Italian dialect, reads "Where others cannot go, we do." (Tumiati/Ravenna Archives)

The reverse of the medal lists the localities in which the batterie volanti saw action. These included Sîdî Rizq (Sidi Rezegh), Bi'r al-Ghabî (Bir el Gobi), al-'Adam (El Adem), al-Mukhaylî (Mechili), and ad-Dûdah (El Duda). (Tumiati/ Ravenna Archives)



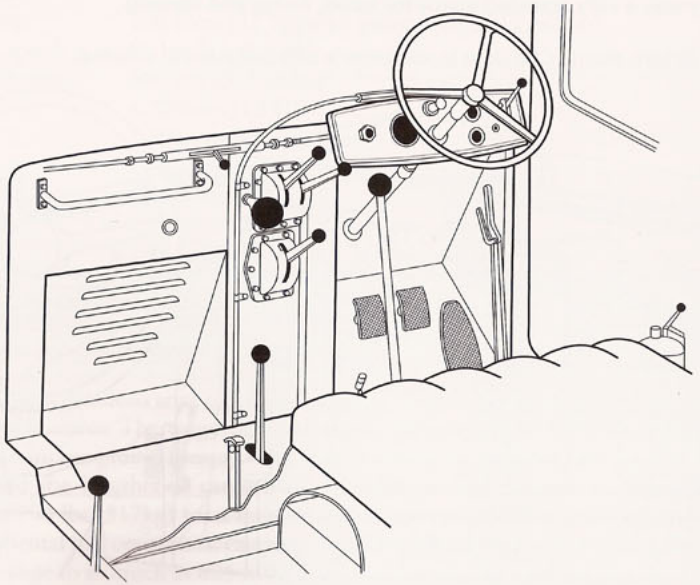
The second type of autocannone built in North Africa for the RECAM (Raggruppamento Esplorante Corpo d'Armata di Manovra – Mobile Army Corps Reconnaissance Battlegroup) utilized the Škoda 100/17 howitzer. This howitzer was one of Škoda's best guns in World War I, and in 1918 a number of them were captured by the Italians. Since it was better by far than the Italian 105/14 Ansaldo-Schneider howitzers standardized in 1916, the 10cm Škoda (Model 15 and 16) was issued to the artillery regiments of most Italian infantry and mountain divisions whenever the weapons were available. The howitzer remained in service until the late 1940s, when it was further modified and served for an additional period in the post-war Italian Army.

The first battery equipped with the 100mm Škoda guns was formed in late 1941 and saw its first action in November 1942. The jerrycans carried in a rack were a common addition to vehicles in the desert. The vehicle proved to be a steady enough firing platform, even without chocks behind the rear wheels, although it was necessary to adjust sighting after each shot, reducing the rate of fire to a maximum of six rounds per minute. Maximum range was 9,235 meters (10,100 yards).



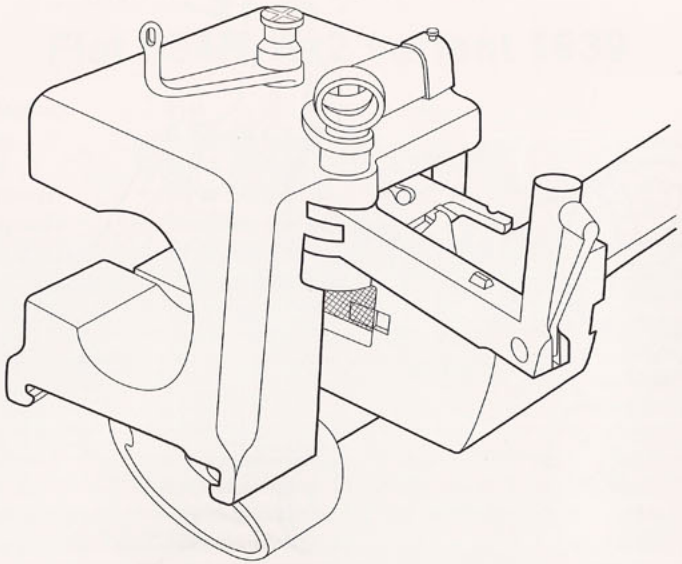
The truck selected for this conversion was the Lancia 3 Ro NM, a Diesel truck that was considered the most reliable heavy truck in the North African theater. Although a 4x2, it was capable of good speeds on sand and desert tracks, had a good load capacity, and was easy to maintain. With the top of the cab cut away and with lower sideboards the truck became well suited to desert warfare.

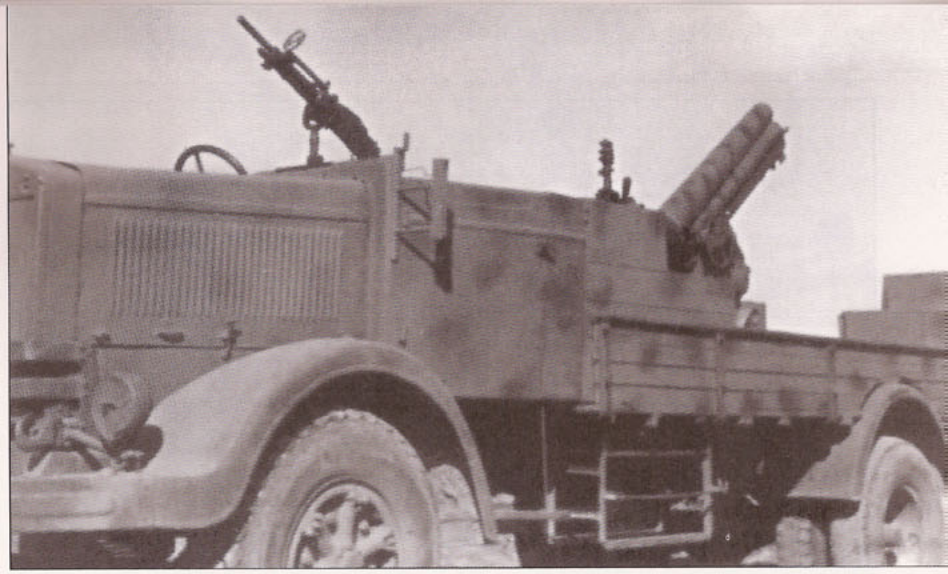
The Italian Lancia 3 Ro heavy truck driver's compartment is detailed.



A 100/17 mounting sees action during the battle of Marmarica. The upper carriage of the howitzer has been retained and mounted on a lower support and turntable platform that were custom fabricated at a workshop in the Italian settlement of "Villaggio Berta" at al-Qubbah, 30km west of Darnah ("Derna"). The gun's elevation remained that of the original mountain howitzer, from -7.3° to +48°. Traverse on this mount was 360°. Ammunition included the powerful EP (effetto pronto, or hollow charge) rounds.

Details of the 100/17 howitzer breechblock appear in outline.





The camouflage pattern on this truck consists of random patches of green rather than the more frequently encountered green stripe pattern. The ammunition locker immediately behind the cab is flush with top of the cab door, and is one of at least three variants encountered on this type of autocannone. Some of the vehicles of the second batch of 12 built in 1942 had a secondary armament for close-in defense, consisting of an 8mm Breda Model 38 tank machine gun, operated by the gun captain. Photographic evidence shows some differences in the cargo body between the newly produced autocannoni and the earlier ones that had formed the first battery and which were lost after a few combat engagements.

The left side modification to the original chassis is clearly evident on this autocannone in action at the front. The striped camouflage scheme has been applied to this vehicle.

An autocannone of the newly formed Gruppo autocannoni da 100/17 shows some differences from the first battery's model. This gun is a 100/17 Model 16, instead of the Model 14, and the ammunition locker rises slightly above the top of the cab door.

The ammunition lockers on this autocannone, also from the newly formed Gruppo autocannoni, are mounted noticeably higher behind the truck's cab, than on other trucks. The autocannone's number is prominently displayed in white on the cab's door.

Italian Gun Designations and Units

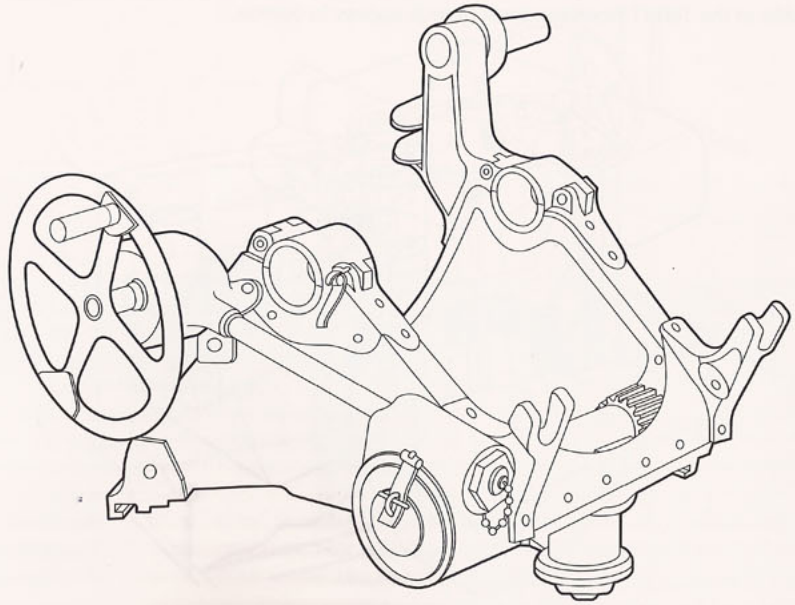
The Italians used two numbers separated by an oblique slash, such as 65/17, to designate a gun's caliber and barrel length, rather than the more common method of quoting the gun's caliber followed by the letter L and a number denoting barrel length (such as 100 L17). In the example of the 65/17 gun, the number 65 refers to the diameter of the gun's bore in millimeters, and the number 17 refers to the length of the barrel expressed as a multiple of the gun's bore diameter (e.g., 65x17 = barrel length of 1,105mm).

Units with Gun Trucks

75/27 C.K.: Groups were assigned at the Corps level, and occasionally assigned to divisions or brigades (e.g., to the Brigata Corazzata Speciale – Special Armored Brigade – in 1940). The fourteen groups bore Roman numerals II, III, IV, V, VI, VII, VIII, IX, XI, XII, XIII, XIV, XX, and XXI. Groups numbered X and XV were organized by March 1942, and one independent battery was also created.

65/17: Seven batteries, normally subordinate to the Raggruppamento Esplorante di Corpo d'Armata di Manovra (the RECAM, or Mobile Army Corps Reconnaissance Battlegroup) and occasionally assigned to divisions operating in North Africa until May 1942. The 65/17 batteries numbered 1 through 6 initially were subordinated to Groups numbered I and III, but which in late 1942 were redesignated as XIV and XV Groups. The seventh battery was an independent battery (the 11ª Batteria Autonoma = 11th Independent Battery) The batteries consisted of four gun trucks each.

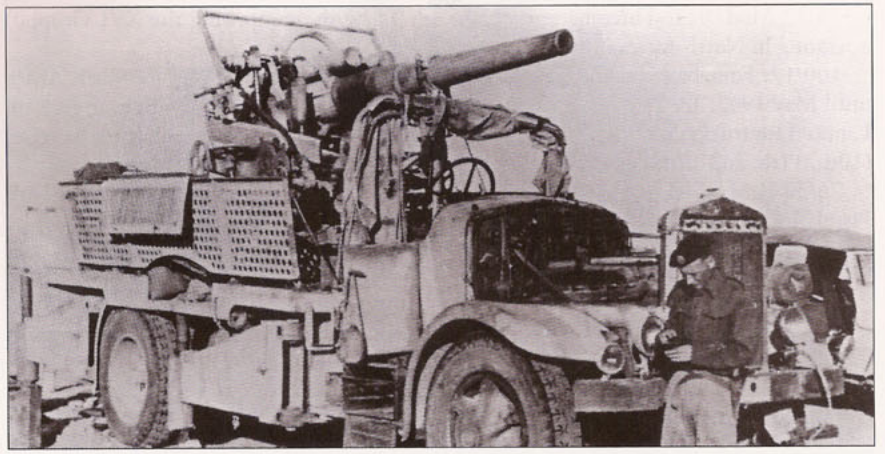
Details of the elevating handwheel and mechanism of a 100/17 howitzer appear in outline.



The Fiat 634 N was selected as the chassis for the 102/35 autocannone because of its size, capabilities, and automotive performance. Nicknamed the Elefante (Elephant) because of its size, it was derived from a commercial version that differed considerably in its external aspects. The 634N was the only other heavy truck in the same category as the Lancia 3 Ro, whose issue began in 1939-40. It had been selected for use with the Saharan units in 1938 and was employed to carry the lighter 20mm Breda cannon and the 47/32 AT gun in its original cargo body. However, as events continued to unfold, both the 20mm Breda and the 65/17 gun were mounted on smaller, more agile captured British and Canadian vehicles and the 634N was put to use as a platform for heavier guns such as the Navy's 76/30 gun and the 100/17 howitzer.

Fiat 634N, 4x2 variant 1939

Manufacturer:	Fiat
Weight:	6,200 kg (13,669 lbs)
Engine:	Fiat 6 cylinder Diesel, 8,355cc
Horsepower:	80 at 1700 RPM
Fuel capacity:	150 liters (40 gallons)
Maximum speed:	41 km/h (25.5 mph)
Maximum range:	420 km (261 miles)
Length:	7,605mm (25')
Width:	2,300mm (7'6")
Height:	3,250mm (10'8") (with canvas cover)
Wheelbase:	4,300mm (14'1")
Front track:	1,816mm (6')
Rear track:	1,850mm 6'1")
Tires:	Desert 36x8, or 11.00-20
Ground clearance:	Front 440mm (1'5"), rear 390mm (1'3")
Fording:	Not available



A British officer examines an autocannone da 102/35 on a FIAT 634 N chassis abandoned on the North African battlefield probably in 1942. The vehicle is complete; the engine cover has been removed and laid on the right extension of the perforated crew platform. It appears to be painted plain sand overall. (Tank Museum Bovington)

A British soldier poses on the platform of a 102/35 gun, the cab of which had been hit by an enemy round in North Africa in December 1941 or January 1942. The vehicle's right rear stabilizer also appears damaged. It wears the same camouflage scheme as the other autocannoni of the Batterie Volanti expanded group. The 102/35 guns were naval guns and were manned by Milizia Artiglieria Marittima (MILMART) personnel. The MILMART was a coastal artillery organization that belonged to the Regia Marina. In accordance with Militia (Fascist) terminology, the MILMART was organized into Legions bearing Roman numerals. These guns belonged to the X MILMART Legion.

75/27 Mod. 911: Three batteries (7th, 8th, and 9th, comprising the XVI Gruppo) operating in North Africa until May 1942.

100/17: Four batteries, occasionally assigned to divisions operating in North Africa until May 1942. 13ª Batteria Autonoma = 13th Independent Battery, with four guns on Lancia 3 Ro trucks, and the 12º Raggruppamento = 12th Battlegroup with three batteries (10th, 11th, and 12th).

76/30 R.M.: MILMART, further assigned to 60th Sabratha Infantry Division/16th Pistoia Infantry Division; Centauro Armored Division

90/53 Lancia 3 Ro:

DI Gruppo to 132nd Artillery Regiment, Ariete Armored Division
DII Gruppo to 131st Artillery Regiment, Centauro Armored Division
DIII Gruppo to 133rd Artillery Regiment, Littorio Armored Division

90/53 Breda 52:

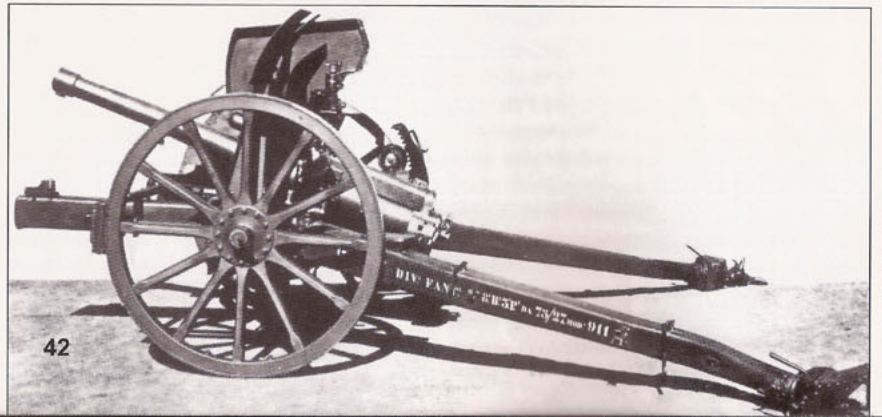
DIV Gruppo, 3º Raggruppamento Artiglieria Contraerea (Tunisia, destroyed)
DV Gruppo, Sicily, July 1943
DVII, subordination unknown
DVIII, subordination unknown
DLVI, subordination unknown
DLVII, 20th Artillery Regiment, Piave Infantry Division
DXI, subordination unknown
240th, 241st, 242nd, 243rd, 244th batteries, subordination unknown

102/35: 1st and 6th Batteries, MILMART, assigned to Ariete Armored Division and Trento Motorized Division

20mm Breda 20/35: 12ª Batteria Autonoma (12th Independent Battery) on CMP Ford F15 or F15A trucks; attached to III Gruppo; 14a Batteria Autonoma (14th Independent Battery). Also, apparently issued on a section basis to support the various batterie volanti.

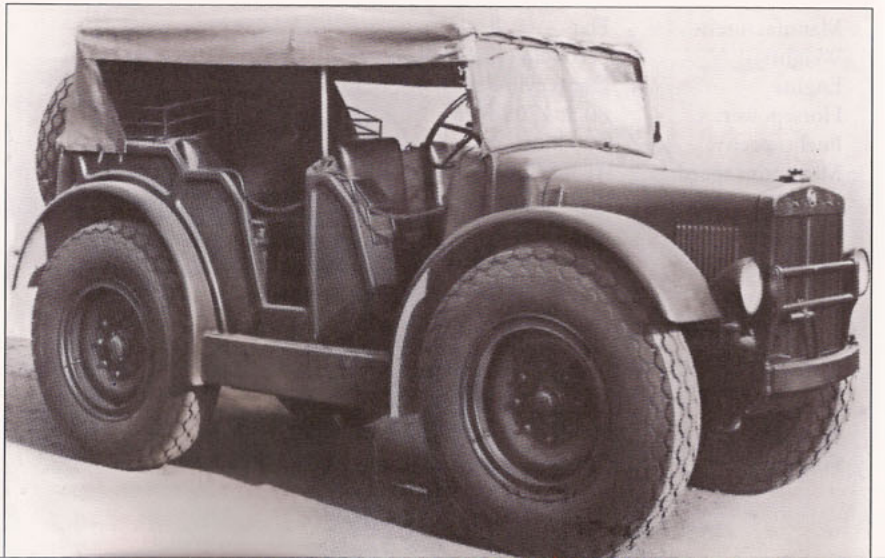
103ª Compagnia, X Arditi: one Chevrolet 15 CWT w/20mm Breda; four Ford 15 CWT w/20mm Breda; one Morris CS8 w/20mm Breda (on a provisional basis until Italian AS 42 camionette were available).

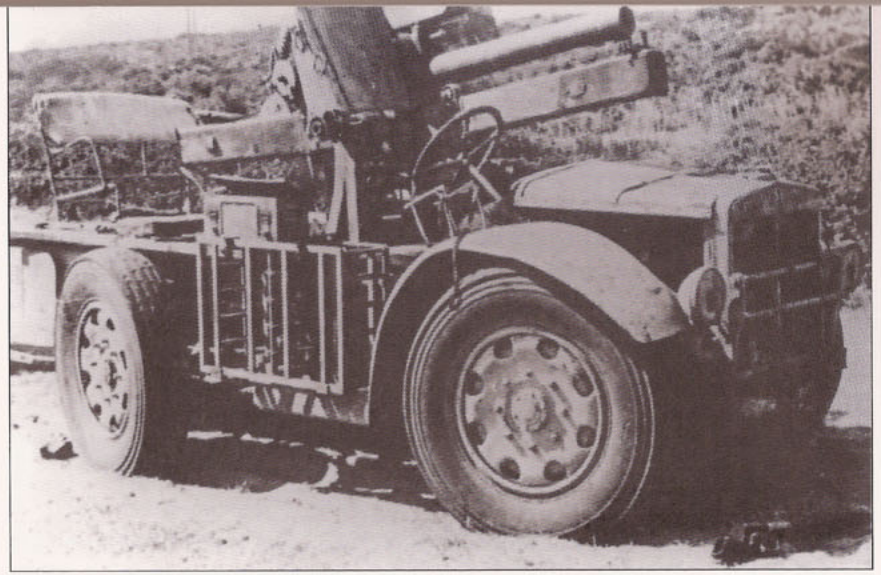
The 75/27 Model 1911 was the Vickers-Terni Italian version of the gun developed by French LTC (Retired) Joseph Albert Deport (1846-1926), patented on 10 August 1908.



An RAF press officer and a war correspondent examine the grave of an Italian gunner. Behind them is one of the two surviving guns of the 1st Battery destroyed by an Allied air attack in Cyrenaica, Libya, in early December 1941. (Australian War Memorial)

The vehicle on which the model 1911 was mounted was the SPA TL 37 Libia, a 4x4 colonial prime mover with large sand tires that had a greater range than the metropolitan variant, made possible by a 150-liter (39.6-gallon) auxiliary tank carried on the ammunition compartment in the rear body.





This TL 37 Libia has been transformed into an autocannone, by modifying the rear body to support the two trails of the original gun carriage that were shortened and fixed to the chassis frame. The original shield was also redesigned and the steering column modified to lower the steering wheel to facilitate firing. Other modifications included provision of an ammunition rack on the right side, repositioning the auxiliary tank under the rear chassis, and mounting a spare wheel on the left side. A standard TL 37 Libia acted as an ammunition carrier, with 32 rounds in the rear ammunition compartment. Crew of the gun vehicle included the gun captain, driver, and two gun crew. Two more members rode on the ammunition carrier.

TL 37 4x4 prime mover, 1937-1948)

Manufacturer:	FIAT/SPA
Weight:	4,117 kg (9,076 lbs)
Engine:	4 cylinder gasoline, 4053cc
Horsepower:	52
Fuel capacity:	100 liters (26.5 gallons) plus one 150 liter (40 gallon) auxiliary tank and two each with 35 liters (9 gallons)
Maximum speed:	50 km/h (31 mph)
Length:	4,130mm (13'6") w/o spare wheel
Width:	1,830mm (6')
Height:	2,180mm (7'2") (with canvas cover)
Wheelbase:	2,500mm (8'2")
Front track:	1,518mm (4'11")
Rear track:	1,518mm (4'11")
Tires:	Libia 9.75-24
Ground clearance:	345mm (1'1")
Fording:	Not available

The 75/27 mounted on the TL 37 shows modifications to the original gun shield. The gun truck is followed by its ammunition carrier. In March 1942 it equipped the XVI Gruppo (the Italian designation for the 16th Artillery Battalion consisting of three batteries) of the 136th Artillery Regiment.

The 1st battery is equipped with autocannoni. Front shields were soon removed.

The Hereditary Prince of Italy stands near the driver in this SPA TL 37 Libia with the Army Chief of General Staff seated behind him. Since there is no canvas cover on the vehicle, the auxiliary tanks are visible on the ammunition compartment. The vehicle mounts the Pirelli Libia tires.

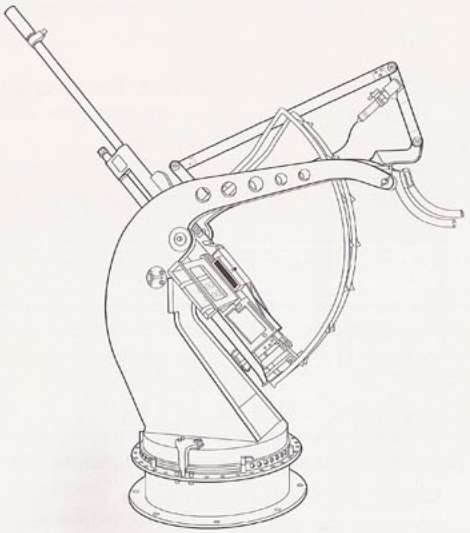
The large front shield normally fitted on this 75/27 gun has been removed, leaving the smaller secondary shield in place. The 75/27 was a French field gun that was also effective against tanks when supplied with ammunition that had been developed specially for that role. Although lacking in aesthetic appeal, the system was nevertheless formidable.

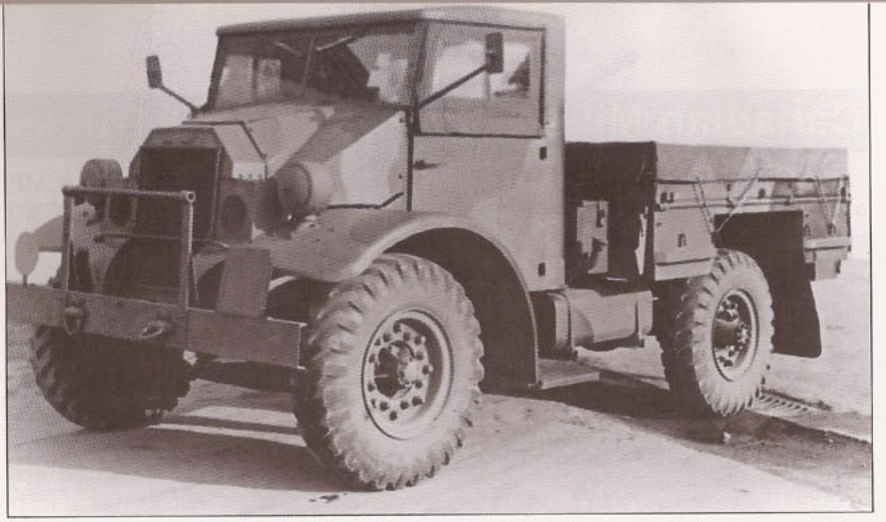
A column of the 136th Artillery Regiment moves toward the Sîwah Oasis in summer 1942. This 75/27 gun crew has left the ammunition carrier and is riding on the gun truck, ready to react to any possible threat.

The makeshift nature of this gun vehicle is apparent in this picture. Two storage boxes were positioned under the gun trails and the auxiliary fuel tank has been moved under the rear chassis. Only two seats are provided for the gun crew. All of these field-modified Italian vehicles retained their regular identification plates in 1942. The letter T following the number 513 on the second line of the plate signifies trattore (tractor).

The 20mm Breda Model 35 cannon is mounted on its three-trail field carriage. It proved effective against low-flying aircraft when first fielded in the Spanish Civil War of 1936-39, and could also serve as an anti-tank weapon. Elevation was from -10° to +80°, rate of fire was 220 rounds per minute, and muzzle velocity was 840 m/s (2,755 fps). At 400 meters (435 yards) it could pierce a 30mm armor plate; British armored cars kept well out of its range, as at 1,000 yards its AP shell could pierce a 14.5mm armor plate. Maximum theoretical range was about 5,500 meters (6,000 yards).

The 20mm Model 39 static mount was designed for territorial antiaircraft defense. After the war, Italian Celere (rapid reaction) mobile police units mounted this cannon on the U.S. Dodge WC 51 weapons carrier. Elevation was -10° to +90°, and traverse was 360°.





This CMP Chevrolet C15 4x2 GS (General Service) truck is externally similar to the Ford CMP F15. The engine and running gear in the Chevrolet are different from those in the Ford F15, however. The Ford F15 truck was the model more readily available than the Chevrolet, and therefore it was most frequently used by the Italians to mount the 20mm Breda Model 35 or Model 39 for antiaircraft protection of the "Flying Batteries." (TMB 1704/01)

This 20mm Breda Model 39 is mounted on a 15 CWT CMP Ford F15 camionetta. Each of the ammunition boxes behind the driver's position carries four 12-round magazines. The white Savoy Cross on the hood was the air recognition marking and the triangle on the fender was the unit marking.

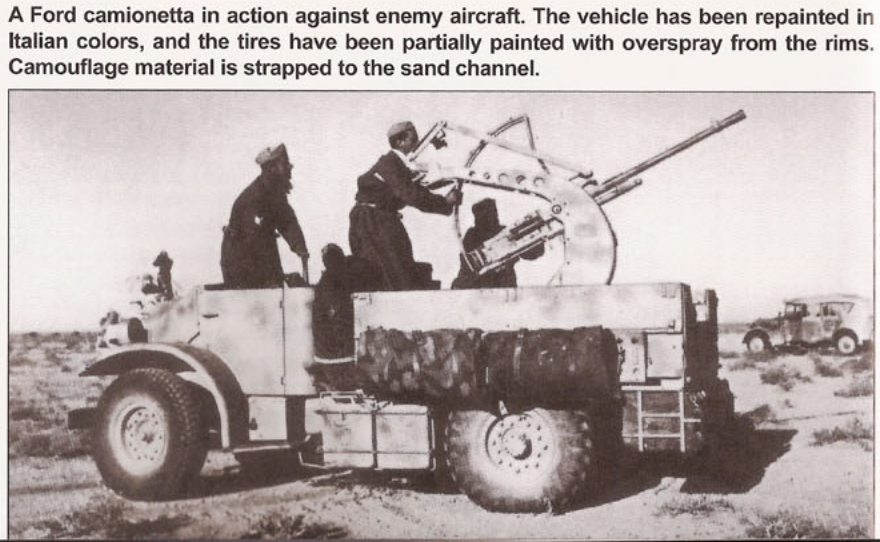
Canadian Military Pattern (CMP) Trucks

The Italians made use of various types of captured Canadian military pattern (CMP) trucks. The most commonly encountered as Italian gun mountings were the 15 CWT Ford F15 and Chevrolet C15 trucks. Both the F15 and C15 were 4x2 vehicles; the 4x4 versions were designated F15A and C15A. Although photographic evidence confirms use of at least a few Chevrolet C15As, the vast majority of CMP 15 CWT vehicles used by the Italians were Ford F15s. At least a few CMP Ford F60s (a three-ton equivalent) were fitted with the 20mm Breda anti-aircraft cannon. The acronym CWT stood for "hundredweight," which equated to 112 pounds (about 50 kg). The 15 CWT was roughly equivalent to the U.S. ¾ ton truck category. These trucks were built to common specifications and were almost identical in exterior appearance. Differences were minor; Ford and Chevrolet used different grille mesh patterns, and the maker's badges were different (Chevrolet using its classic "bowtie" emblem, while Ford used its typical script logo).

A front view of the F15 with the Breda Model 39. Two ammunition boxes are placed near the spare tire, behind the driver's position. The commander is a sergeant. The weapon posed a danger to Allied aircraft below 2,000 meters (about 6,700 feet).

All members of the crew of this F15 scan the sky for enemy aircraft, with the 20mm cannon ready to fire. Behind the driver's seat, the three ammunition boxes provide a good reserve of spare magazines. The Allies particularly respected the 20mm Breda. A HQ U.S. Forces in Theatre, Cairo, Egypt, document dated 4.26.1943 1200 reported that : "As antiaircraft protection for the motorized column . . . there is evidence that the 20mm gun is used independently and is very effective. Large numbers are used on the march and it is generally known that in Libya pilots did not like to attack columns because of the intensity of fire from 20mm guns." This vehicle belonged to the 20mm Antiaircraft Section, 1st Gruppo, 136th Artillery Regiment, of the Giovani Fascisti Division. The officer in charge, holding the binoculars, was commissioned as a lieutenant in the alpine artillery branch. (LT Silvio Monte).

A Ford camionetta in action against enemy aircraft. The vehicle has been repainted in Italian colors, and the tires have been partially painted with overspray from the rims. Camouflage material is strapped to the sand channel.



While the rest of the crew of this F15 camionetta take a break, one member remains alert, scanning the sky for enemy aircraft. Temperatures in the desert, even in the daytime, could be chilly, as is evidenced by the greatcoats worn by several members of the crew. The coats appear to be war booty, possibly Australian. (Tumiati/Ravenna Archive)

Mounted on this Ford F15 truck is a 20mm Breda Model 35 20/65 cannon, referred to both officially and commonly as the Breda da 20/65. The crew always consisted of four members.

Members of this anti-aircraft section pose around their vehicle, in this case, a CMP Ford F60 rather than the more commonly encountered F15. As on most vehicles of the flying batteries, sand channels and jerrycans are in evidence. (Tumiati/Ravenna Archive)

It seems that most of the section's personnel have gathered for this picture. Seated on the hood of the vehicle is Sergeant Francesco Tumiati, the vehicle commander, whose family provided many of the photographs that he took of the anti-aircraft vehicles. (Tumiati/Ravenna Archive)

Although the 20mm Breda is fitted with a muzzle cover to protect it against sand and dust, the breech mechanism remains exposed to the elements. The driver of this vehicle is Roberto Mieville who was awarded a number of medals in 1943 for his service in Africa, was captured in Tunisia on 10 May 1943, and was sent to the POW camp for Italians in Hereford, Texas. He died in a car accident. (Tumiati/Ravenna Archives)

The breech mechanism of the Breda cannon on this F15 is shrouded and there are ammunition lockers behind the driver. (Tumiati/Ravenna Archives)

CMP Ford F15

Manufacturer:	Ford (Canada)
Weight:	5,750 lbs (2,608 kg)
Engine:	Ford 239 V8 L-head (3,917cc)
Horsepower:	95 HP @ 3000 rpm
Fuel capacity:	24.5 gallons (93 liters)
Maximum speed:	Not available
Maximum range:	290 miles (467 km)
Length:	14'2" (4,318mm)
Width:	7'2" (2,184mm)
Height:	8'1'" (2,464mm)
Wheelbase:	8'5" (2,565mm)
Front track:	5'7" (1,702mm)
Rear track:	5'5" (1,651mm)
Tires:	9.00-16
Ground clearance:	8.5" (216mm)
Fording:	Not available

Note: These specifications refer to an original Canadian F15. The Italians changed several features. The Breda Model 35 cannon weighed 678 lbs (307kg). Ammunition and full jerrycans added about 725 lbs (320kg), for a total weight of about 7,153 lbs (3,235kg) combat laden. Another 120-160 liters (31.7-42.3 U.S. gallons) of fuel in jerrycans increased the range to as much as 790 miles (1,470km) under optimal conditions.

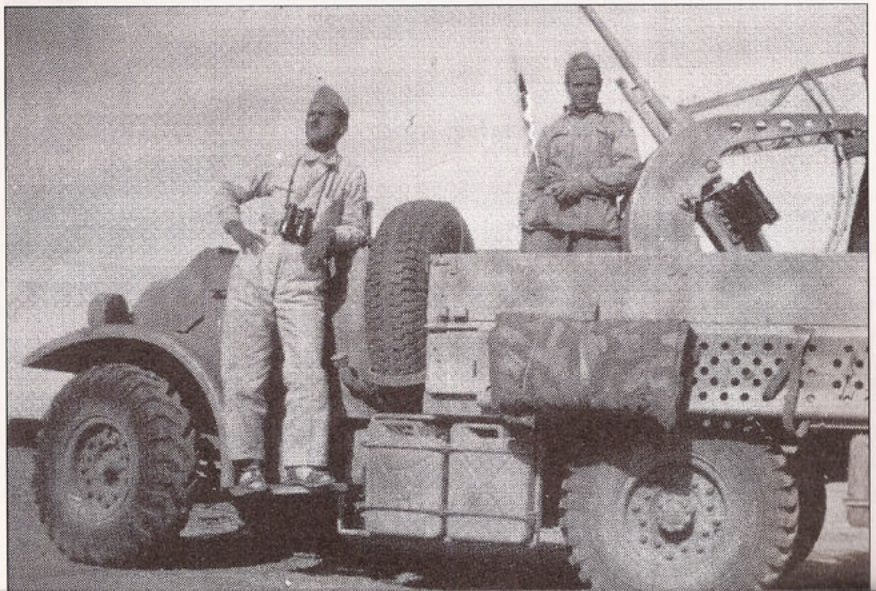
A hand pump maintains proper tire pressure on an F15. (Tumiati/Ravenna Archive)

The gunners on this camionetta appear at the ready, although somewhat relaxed. The unit identification code on the right fender indicates the 3rd vehicle of the 11th battery. The square grille mesh identifies this as a CMP Ford F15; the CMP Chevrolet C15 had a diamond-shaped grille pattern. (Tumiati/Ravenna Archive)

During the process of modifying this F15, light gray-green patches have been sprayed over the original British sand color. An Italian Model 29 camouflage tent canvas is folded over the sand channel. (Tumiati/Ravenna Archive)

In this obviously staged photo, the individual on the fender of this camionetta is armed with the 6.5mm Carcano Model 91 cavalry carbine with folding bayonet. (Tumiati/Ravenna Archive)

Although there appears to have been an attempt to standardize anti-aircraft vehicles on the CMP F15 chassis, the Italians made use of anything serviceable that came to hand. This Breda Model 35 cannon is mounted on the larger CMP Ford F60 chassis (a 3-ton equivalent).



The Italians also mounted the 20mm Breda on the SPA Dovunque 35, as seen here in North Africa. The free-wheeling spare tires mounted on both sides of the vehicle to assist in avoiding bellying are characteristic of the Dovunque class of trucks. The paint scheme is the normal green over a sand base. (Tank Museum Bovington)

The 1937 prototype of the SPA 38R cargo truck mounts a 20mm Breda Model 35 cannon. The bows forward of the gun could be covered with canvas to protect the ammunition boxes normally stowed behind the cab.

The 20mm Model 35 cannon was generally mounted on the SPA 38R truck. The ammunition boxes were aligned near the back of the cab. This picture, taken on the Russian front, shows chains fitted on the rear wheels to cope with the muddy ground. There is not much spare room for the gunners who are clustered around the Breda. The gunners are carrying the Italian bolt-action Model 91 cavalry carbine fitted with a folding bayonet. The contrast between the obsolete carbines and the 20mm Breda gun, which represented advanced technology at the time, is stark.

Colors and Markings

The preponderance of autocannoni employed in North Africa were painted in kaki sahariano (FS20260), although some of the improvised autocannoni on Italian trucks had a base of khaki oversprayed with either patches or stripes of gray-green (FS 34159). The Italians used the above-mentioned schemes to repaint captured British vehicles employed as mounts for guns. Some of the older autocannoni (notably the 75/27 C.K. deployed in East Africa) retained their original gray-green finish, although those in North Africa followed the khaki and green scheme. Reliable information concerning individual vehicle markings is virtually nonexistent. Photographic evidence suggests that the autocannoni da 100/17 had numbers painted on the cab doors in white and probably in red; the number itself presumably indicated the number of the howitzer, while the color (white or red) may have indicated the parent battery. At least some autocannoni da 90/53 mounted on the Lancia 3 Ro chassis had a Centaur stenciled on the cab door, indicating subordination to the Centauro Armored division's artillery regiment. The emblem of the batterie volanti equipped with the Morris CS8 fitted with the 65/17 gun was a white triangle with the black silhouette of a gazelle within it. Photographs of one CMP Ford F15 fitted with a 20mm Breda cannon shows what is presumably the vehicle's designation within the battery painted on the right front fender.

A column of autocannoni da 100/17 moves up to the combat area over a difficult track in Cyrenaica in November 1941. A canvas cover protects the gun from sand and dust. The Lancia 3 Ro truck is painted in a common Italian camouflage livery consisting of random green stripe pattern over the yellow sand base color. Several camouflage patterns on Italian vehicles in the desert were similar in both color and pattern to those used on Italian aircraft of the era.

Artillery Specifications

Model	Weight	Muzzle Velocity	Range	Projectile Weight
20mm Breda Model 35	307 kg 678 lbs	830-850 m/s 2,723-2,789 fps	2,500 m 8,202 ft	0.135 kg 0.298 lbs
Cannone da 47/32	277 kg 611 lbs	630 m/s 2,067 fps	7,000 m 7,655 yds	1.4 kg 3.1 lbs
Cannone da 65/17 Mod. 13	560 kg 1,225 lbs	345 m/s 1,130 fps	6,800 m 7,400 yds	4.36 kg 9.5 lbs
Cannone da 75/27 C.K.	1,030 kg 2,270 lbs	510 m/s 1,673 fps	6,100 m 6,671 yds	6.1 kg 13.5 lbs
Cannone da 75/27 Mod. 911	1,075 kg 2,370 lbs	502 m/s 1,647 fps	10,200m 11,155 yds	6.3 kg 13.9 lbs
Cannone da 75/30 R.M.	1,500 kg 3,306 lbs	550 m/s 1,804 fps	8,400 m 9,186 yds	4.28 kg 9.4 lbs
Cannone Ansaldo-Terni Mod 39/41 da 90/53 (static mount)	3,600 kg 7,937lbs	830 m/s 2,723 fps	16,700 m 18,263 yds	17-18.75 kg 38-41 lbs
Škoda cannone da 100/17 Mod. 14*	1,417 kg 3,124 lbs	430 m/s 1,410 fps	9,970 m 10,907 yds	14 kg 31 lbs
Vickers Terni cannone da 102/35 (on mod. 1933 mount)	5,017 kg 11,061 lbs	755 m/s 2,477 fps	12,000 m 13,123 yds	16 kg 35.3 lbs

***Note: The original Czech designation for the 100/17 was 100mm houfnice vz. 14. It was classified as a mountain howitzer.**

Analogous British and German Vehicles

Truck mounted artillery during World War II was by no means a uniquely Italian development. The Germans, British, French, Soviets, and other nations mounted light to heavy anti-aircraft, anti-tank, or field guns, in some cases only on an experimental basis, on truck chassis. The British had developed a fairly wide array of gun-armed trucks during the war, ranging from jeeps mounting machine guns up through the experimental prototype of the Thornycroft Amazon that mounted a 17-pdr anti-tank gun on a fully armored truck chassis. The Germans developed gun-truck combinations ranging from light anti-aircraft guns mounted on trucks to 90mm guns mounted on a special low mount chassis.

In the desert, all three parties fielded gun-armed trucks, although the Italians probably can be credited with having developed the most innovative improvised vehicles. Both their German allies as well as the opposing British and Commonwealth forces operated similar, and in some cases, almost identical vehicles fitted with relatively light armament; the Italians did, however, also mount considerably more powerful weapons on truck platforms, though the numbers fielded were small.

The British approach to truck-mounted artillery in the desert consisted primarily of mounting anti-tank guns portee-style on the beds of 3-tonne General Service (GS) cargo trucks. The portee-mounting was achieved by simply loading the anti-tank gun on the truck bed by using a couple of planks as a ramp and then manhandling the gun onto the truck. Generally, the 2-pdr anti-tank gun was mounted on the cargo bed facing rearwards, whereas the 6-pdr anti-tank gun was mounted facing forward, firing over the roof of the cab. Although many variations could be encountered, the 2-pdrs tended to be mounted on Canadian Military Pattern vehicles, whereas the 6-pdrs were mounted on Austin or Bedford 3-tonners. The trucks carrying the 6-pdrs had their cabs cut down and modified to allow clearance for the gun to fire, and also usually had blast deflectors fitted over the radiator. The portee mounting allowed little flexibility for traverse, especially for the forward-facing 6-pdrs. This fact meant essentially that the truck itself had to be aimed at the target prior to engagement. Some Ford F60L trucks were locally modified in North Africa with the French 75mm gun on a revolving mount similar to that used by the Italians. Generally speaking, however, British and Commonwealth truck-mounted artillery did not achieve the level of flexibility and innovation shown by the Italians in the desert.

Ironically, but perhaps not surprisingly, a somewhat symbiotic relationship involving captured equipment developed between the Italian and British forces in the desert. Just as the Italians borrowed captured British trucks, whose capabilities and reliability they recognized, to develop the camionette, the British followed suit and borrowed weapons from the Italians that manifestly outclassed their own to arm their vehicles. The British appreciated the excellence and capabilities of some of the Italian weapons, especially of the 20mm Breda dual-purpose cannon that was far superior to the Bren and Lewis machine guns for air defense, and was also much less cumbersome than the 40mm Bofors and lent itself admirably to mounting on light vehicles. The British did not limit themselves to the 20mm Bredas, however, but mounted a variety of captured Italian weapons on an assortment of vehicles. Several combinations approximated the Italian truck/gun camionette. The famed British Long Range Desert Group (LRDG) particularly appreciated the 20mm Breda Model 35 cannon, mounting them on the 30 cwt Chevrolet 1533 X 2 truck, placing the combination at or near the tail end of LRDG convoys to provide protection from air attack. By early 1942, LRDG patrols routinely included the 20mm Breda in their establishment. The LRDG also operated various 4x4 trucks mounting a 37mm Bofors anti-tank gun, but the guns were mounted portee style and lacked the comparatively sophisticated purpose-built mountings that the Italians used for their 47mm and larger weapons. At least one other Commonwealth army is known to have operated a truck armed with a an Italian gun; the Australian 3rd Light Anti-aircraft Regiment fitted a 20mm Breda Model 35 cannon on a 4x2 Chevrolet 2-ton truck in Libya in 1941.

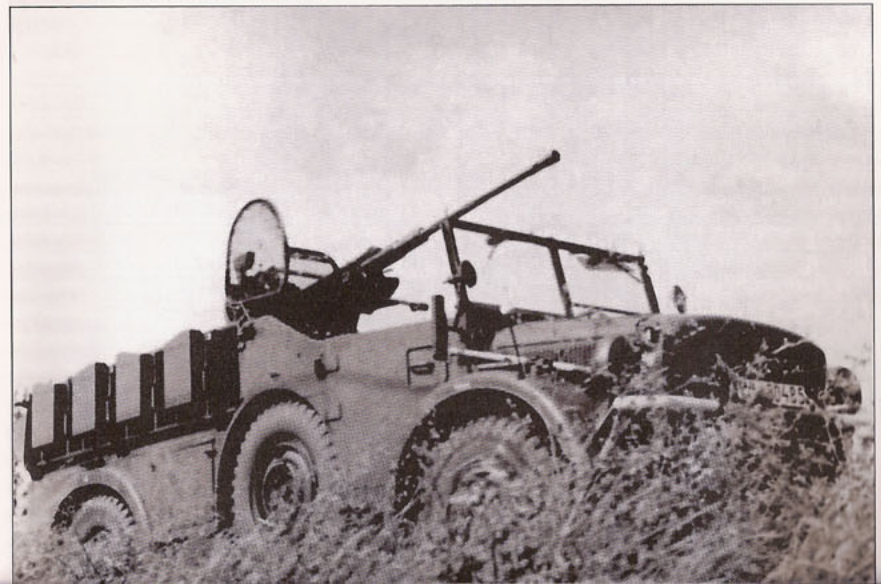
Although not strictly in the category of gun-armed trucks, British Commonwealth countries also up-gunned the Marmon Herrington Mk 2 armored car with captured Italian weapons, including the 20mm Breda cannon, the 20mm Solothurn anti-tank rifle, and the 47/32 anti-tank gun. The original armored car turret, mounting a .55 caliber Boys anti-tank rifle, was replaced by a barbette mounting one of the Italian weapons. Some of the Marmon Herringtons were fitted instead with a 25mm French Hotchkiss cannon with its original French shield. The Hotchkiss weapons had been issued to some Italian units as war booty following the French defeat in 1940, and subsequently captured by the British in the desert.

In contrast to the Italians and British, who in the case of mobile light anti-aircraft systems had to rely on the other party's equipment to come up with a viable composite system, the Germans were able to put together effective combinations of trucks and anti-aircraft weapons that were wholly German in origin. The Germans developed their own truck-mounted light guns, using the Steyr 1500 Kfz 15 4x4 command car and the Auto-Union/Horch 40 Kfz 70 4x4 light truck armed with either the German 2cm Flak 30 or Flak 38 20mm guns, resulting in vehicles very similar to the Italian camionette. Also, like the Italians, the Germans pressed captured British vehicles into service and armed them with 20mm weapons. The Afrikakorps fitted captured CMP Ford F15s with the 2cm Flak 30 in the cargo bed, which at first glance presented a striking similarity to the Breda-armed F15s used by the Italians. As might be expected, the Germans at times made ready use of captured British vehicles that had portee-mounted guns on them, simply painting a rudimentary Balkenkreuz on the doors for identification purposes. Organizationally, these gun-armed vehicles were found in various special formations or special units (Sonderverband and Sonderkommando) that had been organized as raiding units. One special unit, Sonderkommando Dora, included 24 British vehicles armed with 40mm guns. Additionally, despite their preference for arming half-tracked vehicles with larger guns, the Germans also mounted 3.7cm guns on larger 4x4 Mercedes L4500A and 6-wheeled Einheits (standardized) truck chassis.

Like their Italian allies, the Germans utilized captured CMP Ford F15s, which they fitted in a fashion similar to that of the Italians, mounting a 2cm Flak 30 cannon in the cargo body. In this conversion that served the *Deutsches Afrikakorps* starting in 1942, the eight ammunition boxes for the 20-round magazines were carried externally, as they were on the standard German 1-ton self-propelled half-track mounting.

A German 2cm Flak 30 cannon and MG 34 machine gun are mounted on a Steyr 1500 4x4 light truck in the desert. The Flak 30 was similar to the Italian Breda 20mm cannon. The Steyr 1500 had an 85 HP Steyr V-8 engine that allowed it to reach 28 mph (45 km/h) cross country, and had a cross-country range of 175 miles (280 km). It was also fitted with wide-profile tires for desert use.

A German 2cm flak gun is mounted on a 4x4 Auto Union/Horch Kfz. 70 truck. The Horch could be powered either by a 90 HP Horch V-8 or a 78 HP Ford V-8. Both the Germans and the Italians had excellent 20mm anti-aircraft guns that lent themselves to mounting on light trucks; the British had no comparable weapon and relied largely on captured Italian Bredas to augment their own air defense capabilities.



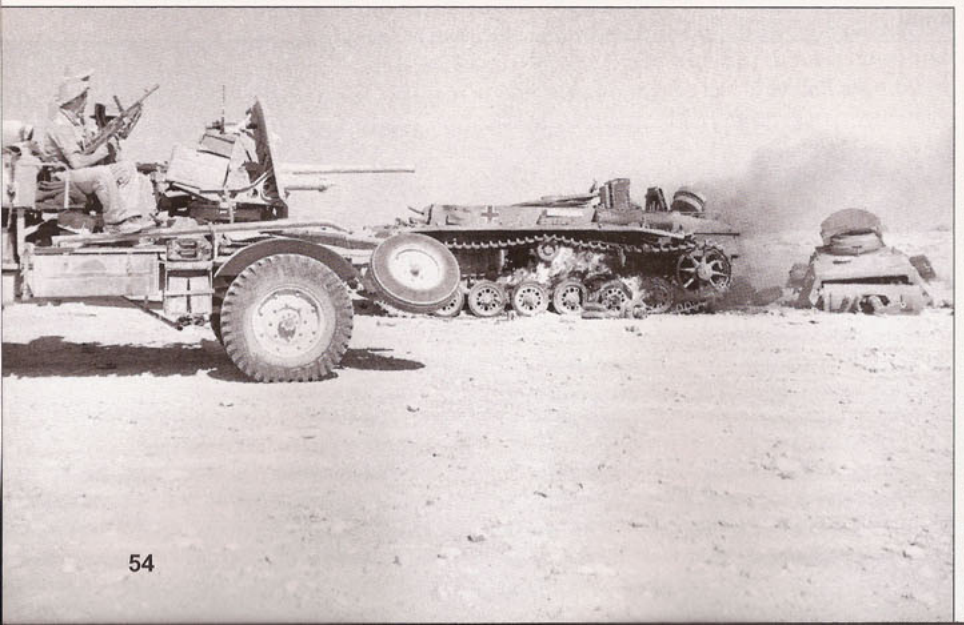
A further model was developed by the Germans – probably following the September 1943 armistice – mounting a static 37mm 37/54 Breda automatic gun on the six-wheeled Einheits (standardized) truck chassis. The gun had been developed for the Italian Navy, but in 1939 both a static mount and a field carriage for the gun were accepted by the Army.

A British CMP Ford F60L with a QF 2-pdr (40mm) anti-tank gun in the rear that was captured by the Germans, has been "Germanized" by the addition of a Balkenkreuz painted on the door and the name "Sepp" added on the tool locker. Axis and Allies both made use of each other's equipment in the desert, and equipment frequently changed hands more than once.

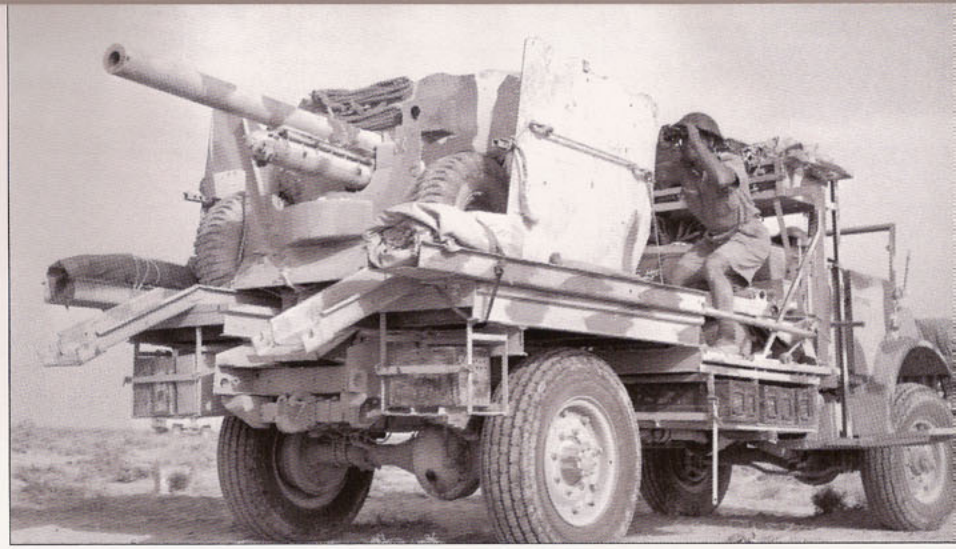
Portee-mounted 2-pdr anti-tank guns line up for a practice shoot in the Western Desert in May 1942. The folded wheels hanging over the rear of the bed are characteristic of this type of mounting. The Bren gun provided a modest degree of protection from air attack. (Imperial War Museum)

A 2-pdr mounted on a CMP 3-ton truck passes a destroyed German PzKpfw III tank in the desert in June 1942. (Imperial War Museum).

With the open ammunition locker in front of him, the loader of this 2-pdr in the Western Desert has a round in his hands in this April 1941 photo. The tires on the truck are 10.50-16 Goodyears, and the smaller tires for the 2-pdr are Dunlops. (Imperial War Museum)



New Zealand LRDG troops return to Cairo in March 1941 following completion of a patrol. The 30 cwt Chevrolet 1533 X 2 truck mounts a 37mm Bofors anti-tank gun in the bed. The Bofors was used to supplement the insufficient number of 2-pdrs available during the early stages of the war in the desert. The Bofors could fire armor-piercing ammunition, high explosive, and white phosphorous shells. (Imperial War Museum)



A 6-pdr anti-tank gun is portee-mounted on the back of a CMP 3-ton truck in the Western Desert in May 1942. The 6-pdr was normally mounted facing forward on British 3-ton trucks and fired over the cab, but this 6-pdr is mounted more in accordance with the practice used for 2-pdrs. The ramps used to load the gun onto the truck bed are visible extending past the rear of the bed. (Imperial War Museum)

A British AEC 4x4 3-ton truck serves as the platform for a 6-pdr portee mount. Standard General Service trucks were modified by having their cabs cut down to allow clearance for the forward-firing 6-pdr mounted on the truck bed. The trucks were disguised as normal GS trucks by using a canvas cover to hide the gun and, in this case, by addition of a canvas covering that simulated a normally configured cab as well. (IWM)

A South African Marmon Herrington armored car is fitted with a captured Italian 47/32 anti-tank gun in lieu of its normal light armament. The 47mm gun was standard armament on Italian tanks and armored cars, as well as being used as a towed anti-tank gun. The opening in the shield for the gun shield has been crudely made with a cutting torch. (Imperial War Museum)

A battery of 102/35 autocannoni undergoes testing at Ansaldo's seaside firing range during World War I. The massive stabilizer trails, normally transported on a separate support truck, have not yet been fitted to the truck frames.

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